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by the contraction of the occipito frontalis muscle and this muscle, to take the single example, because it has been trained since infancy to come to the aid of the eye muscles in widening the range of vision, rallies at once to play its part, even although your friend knows full well that the scene in question lies a thousand leagues across the sea. We note, then, that a simple act of recollection is not a pure mental process, as that phrase is commonly understood, but manifestly contains a motor element as well. Darwin has pointed out, on the other hand, how some of the muscular action associated with difficult vision is repeated in the act of mental reflection. In difficult vision, as seen in the gaze of the writing boy on his slowly forming letters, the bodily eye is assisted by muscles which have no actual connexion with it—the eyebrows mass together in an attempt to shut out all else but the narrow field under observation and producing vertical lines at the root of the nose; the mouth, again, closes firmly as well. So when the mind is concentrated upon some point, no matter how abstract it be, the head is bent downwards, vertical furrows knit the brows, and the mouth is firmly closed—a series of phenomena familiar to all in such a state, but not so universally recognised as proving that "muscular action is an indispensable factor in attention."[3]

If you would have further proof close your eyes and think hard of something you would like to see and you will at once become conscious of a feeling of effort in your eyes as if there were muscles there dragging your brain to the front, and then as suddenly change your thought to something you would wish to hear and your brain will seem to be dragged to the side of your head. These sensations are doubtless due either to muscular action in the peripheral parts or to excitement in the motor area of the brain which initiates and controls such action. Another interesting phase of muscular action in attention is the part played by respiration. Sudden attention, in fact, stops respiration for the moment, as can be proved in the simple experiment suggested by Ferrier of throwing out the arm with the forefinger bent as if on the trigger of an imaginary revolver—a feeling of effort is at once produced. Then you can prove by free wagging of the finger that there is no tension sufficient to cause this feeling there, yet it continues, because, as you will find, you have stopped breathing, the muscles of your trunk having locked your chest. The moment you start to breathe again all trace of effort disappears and although your arm remains outstretched you are not conscious of its weight.

One has only to remember the deep sighs or yawns that follow a bout of attentive reading to realise to what extent the chest muscles have been interfering with the normal course of respiration—accelerating it as the argument runs on by leaps and bounds and bringing it to a dead stop when the brain has to wrestle with some knotty point. The sigh or yawn is the greedy lungs' demand for an uninterrupted draught of oxygen. An interesting sidelight on this point is furnished by clinical experience of the mental condition of patients suffering from adenoid tumours in the nose—glandular tumours which obstruct breathing. A continental writer instances several cases of students suffering from this affection who had lost all power of learning anything; they were able to read a phrase six or seven times over without fatigue but also without understanding it, although they were not thinking of anything else—a condition quite different from ordinary distraction; and a modern French psychologist in this connexion points to the felicitous phrase in his language which describes a superficial thinker as "un homme incapable du longue haleine"[4]—a man incapable of taking a long breath.

Enough has been said then to establish the importance of the muscular system in study. The soldier standing at ease turns into a pillar of tense muscle at the word "Attention," and so it should be with the soldier of Study when the unseen sergeant gives the word of command; he must stand to attention in actual fact, body as well as mind must be braced to the task in hand.

Thus we come round by a somewhat circuitous route to that old phrase of eternal truth, "Mens sana in corpore sano," and it follows that if a man's muscles play an indispensable part in his studies, as I have tried to show they must, then he cannot afford to allow his muscles to become weak and toneless. Happy are they whose healthy minds and healthy bodies are so tuned that the call to study finds them ever ready in a perfect state of spontaneous attention, but such are the few, and most of us, suffering as we do from the lack of this harmonious action of mind and body, are set the task of diligently training muscle and nerve to such a pitch and perfect tune that the call to study will find us able at length to gain perfect command of that voluntary attention which is the only key to the treasure-house of knowledge.

I know that I am skirting a field of frequent battle in the course of these remarks on the motor aspect of study. Often we hear the heralds of mind shout a challenge to the knights of muscle and often at the end of the battle we see the champions in this wordy battle sulk each to his tent. "Strength, indeed; who cares about muscles?" mutters the one as he nurses a painful spot where an iron blow has fallen. "Intellect! did he say? What's the good of brains?" murmurs the other, as he furtively fingers the well-cropped but diminutive skull on which his adversary has been raining shafts of contempt. But I am not for the fray; if I did enter, it would be as a champion of the *via media*—the happy mean between mental absorption on the one hand and physical diffusion on the other; but in closing this section I recapitulate the thesis that the only elixir of study is the habit of spontaneous or voluntary attention, that in attention of either sort an essential element is muscular action, that however slight in amount that muscular action may be its effectiveness will depend on the tone of the muscles as a whole, and that therefore it behoves us all, apart from any desire to develop particular muscles, to see to it that we do not fail to keep our whole bodies supple and vigorous and keen.

I have detained you so long among the muscles that I fear you will scarcely bear with me if I dare to lift the scalpel again and turn to tissues yet untouched. I have in my mind's eye a picture of what would be happening in that audience in Bologna of which I spoke had their patience been taxed thus; the courtly ladies would have been off in their Sedan chairs long ago and the portly monks would be deep in a heavenly nap. I promise you, then, only a passing glance at the tissues which still remain, fertile though they be for imaginative treatment; and, first, a word or two on the digestive system. Healthy study is blessed with a good digestion, thanks to a daily lengthening alimentary tract from which the bolus of crude information stands no chance of escaping unaltered, and, thanks to keen analytical juices furnished and trained to prove all things, to sift the useful from the useless, the good from the bad, assimilating the one and rejecting the other. The very antithesis of this prime condition is produced by the kind of digestion the only action of which is a purely mechanical one called contemptuously and well "cramming." But I will not ask this audience to linger for a moment in this melancholy chamber of student pathology, for your very attendance at the meetings of this society shows that student life has a very different and nobler meaning for you. So I dismiss the arid waste which this sweep of my scalpel has touched with a thought from Epictetus on its demoralising effects. "As if sheep," he says, "after they have fed, should present the shepherd with the very grass itself which they had cropped and swallowed to show how much they had eaten instead of concocting it into wool and milk."

I have shown scant courtesy to the majestic place of the brain and nervous system that I have left so little time to show their high place in the anatomy of study, but much that I have said in the section on attention goes to the credit account of the brain, which is, of course, the predominant partner in every act of study. I shall do penance by telling one story to its credit. "Pray, Mr. Opie," asked an admiring but dilletante art student of that great Academician, "may I ask you what you mix your colours with?" "With *brains*, sir," was the gruff but right reply. Nor would I leave the region of the higher senses without referring you to an essay among the delightful *Horæ Subsecivæ* of Dr. John Brown, which has this very story for a text and in which he expounds in his peculiarly charming way the real meaning of the oft-used phrase "presence of mind," at another part the moral to be drawn from the study of the human eye as an organ of stereoscopic vision, and at another dwells on the contrast between an eye that is a mere window looking into an empty space and an eye that has a man behind the window looking out. I would supplement this last fanciful thought by a plea for the constant need of another watchman behind the drum of the ear, for, as common report has it, much that goes in at the one ear goes out at the other.

And what of the heart of Study? Here, indeed, is a

[3] Ribot: Psychology of Attention.
[4] Ribot, loc. cit.

fertile field for allegory; much might be made of its intricate cavities and valves controlling its two blood streams, the one dark in colour and stale, the other bright and fresh; but I prefer to discuss it rather in the more suggestive language of the pre-Harveian days than in that of modern mystery-less physiology. In spite of all the lucid proof we now possess that the heart is but a pumping muscle, old men and young, youths and maidens fair have resolutely refused to relinquish their emotional conception of the nature of the heart, and it still stands in our language, and I suppose ever shall, for something far transcending a mere mechanical arrangement of auricles, ventricles, vessels, and valves. We may hail the heart, then, as the symbol of intense love for, and devotion to, study, and the meanest labourer knows how to pity the man "whose heart," as he says, "is not in his job."

"It's no in books, it's no in lear,
To make us truly blest.
* * * * *
Nae treasures nor pleasures
Could make us happy lang
The heart ay's the part ay
That makes us right or wrang."

Although the actual control of the normal heart's action is not given to us, yet we can temper it with rest, comfort of one sort or another, or by food when it shows signs of drooping from fatigue. The appropriate analogy in study is obvious, we must often bestow similar thought on the heart we have in our work and see to it that the stream of high aspiration and aims which circulate therein are pure and bright as arterial blood. There is a necessary connexion between devotion and sacrifice and the earnest student must ever be prepared for a certain amount of martyrdom. Science has her list of martyrs as well as religion. Vesalius, the greatest anatomist who ever lived, persevered in his researches in spite of persecution, and, excommunicated at length, died an exile. Servetus, a speculative physiologist born before his time, dared to venture an opinion that respiration was an exchange of gases in the air cells of the lungs and was burned at the stake for it. Happily for us we live in less severe times, but it should benefit us to ask ourselves, "Have we a student heart as stout as theirs?"

Now, and lastly, we come to the soul. There have been many attempts to locate the exact anatomical relationships of the human soul; among others, the Hebrew psalmist gave his vote for the kidneys as the *locus* of a part of it at least, and Descartes, one of the fathers of modern philosophy, finding it driven from pillar to post among the human tissues, claimed to have traced it home at last to the pineal gland, a little atrophied mass in the centre of the brain. But although in our own day philosophers have ceased to busy themselves in the search of a reasonable site for it, yet the soul, in the words of a favourite song of our student days, "still goes marching on." And though I cannot tell where it exactly comes in or in what it precisely consists, with equal confidence I claim a soul for Study—a soul whose journey does not end in those faithful studies which earn their due reward in distinguished careers at our seats of learning, nor in that studious training of brain and hands and heart which makes physicians and surgeons worthy graduates throughout the length of their days but which, ever upward and onward, to a goal above and beyond these things, is ever marching on. There is so much to be done in the day's work, so much to be endured, so much to be enjoyed, that there is often little time in the course of it for contemplation of the goal; but let us ever strive to keep green some cherished halting places where the rigours of the day's march can be forgotten and where—

"In seasons of calm weather,
Though inland far we be,
Our souls have sight of that immortal sea."

MANCHESTER HOSPITAL SUNDAY AND SATURDAY FUND.—This year the amount available for distribution from the Manchester and Salford Sunday and Saturday Fund among the medical charities was £7500. The Royal Infirmary and the Children's Hospital receive £1203 and £1174 respectively, while the 17 remaining hospitals have the balance divided among them *pro rata*, the amounts decreasing from £737 received by the Hospital for Incurables to £2 19*s.* by the Homœopathic Institution. Judging by the last amount it would seem that the homœopathic cult does not specially flourish in Manchester.

HUMAN PIROPLASMOSIS.

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(*With Coloured Illustration.*)

AFTER a year's experience of the disease caused by the sporozoan parasite, classified by Laveran and Mesnil in the genus Piroplasma, the new species of which they have paid me the great honour of naming after me, I now give a description of the malady as observed by me in the General Hospital, Madras. Of the identity of the disease in Madras with kala-azar there can be no doubt; as I shall show later, the causa causans is the same.

It was on June 17th, 1903, that I first found these organisms in blood taken by puncture of the spleen during life; I had, however, previously, on April 9th, 23rd, and 24th, 1903, obtained the same bodies from smears of the spleen taken post mortem; relative to this details will be found in the body of my paper. From June 17th, 1903, to date of writing this contribution, June 16th, 1904, there have been admitted into my wards 72 cases suffering from this disease all diagnosed by examination of blood from splenic puncture; the admissions for the same period have been 1304, giving a percentage of 5·52 for Eurasians and natives collectively; separately, Eurasians 2·38, natives 6·79. The death-rate has been 22, or 30·55 per cent. No Europeans were admitted into my wards for this affection but in the other physicians' wards there were a couple of cases. The disease is especially prevalent in the congested and insanitary part of the native quarter called Blacktown; cases, however, come from other parts of the city of Madras. Two were admitted from a village about 20 miles north of Madras but none from any other part of the Presidency. Three came from outside these limits: to wit, one from Rangoon (?), one from Hyderabad, and the other from Bassein (Burma). The disease is equally common amongst poorer Muhammedans and Hindus; the Eurasians, being generally better housed, are not so often victims of the disease. The sexes are equally amenable and age is no bar to infection. It may be mentioned that only male adults and boys of 12 years and upwards in age are admitted into my wards; the statements as to sex and children below 12 years are based on cases in the other physicians' wards. Very few Europeans are attacked owing to their better social conditions.

I shall now describe how I was led to discover the parasite. I had noticed many cases of chronic irregular pyrexia, with enlargement of the spleen and occasionally of the liver, bronchitis, œdema of the feet, subcutaneous hæmorrhages, chiefly of the petechial type, diarrhœa of a dysenteric nature, and cancrum oris. The treatment was most unsatisfactory, no drug having the least beneficial effect. Such cases were being registered in hospital as chronic malaria, but as I was not a believer in the pyrexia of malaria unaccompanied by parasites in the peripheral blood I for the nonce classified the cases as enlargement of the spleen, cause unknown. Notwithstanding, I had still a lurking suspicion that there might be some at present undiscovered stage of the malarial hæmatozoon which might be the cause of these irregular pyrexias, that there were resistant forms of the genera Plasmodium and Laverania.

With a view to remove this doubt I attended the post-mortem examinations and took smears of blood from the spleens of cases said to have died from chronic malaria. On the first day, April 9th, 1903, I found in a slide containing such a smear numerous peculiar round and oval ring-like little bodies, with two masses of chromatin situated on opposite poles. Convinced as I was of their parasitic nature, I could not, however, refer them to any group of the protozoa. I thought I had discovered the long-sought-for resting stage form of the malarial parasite in man. But on procuring the same bodies in two other cases on April 23rd and 24th, 1903, I changed my views and considered that they might be post-mortem degenerations of nuclei of the splenic pulp cells.

On June 15th, 1903, I received the *British Medical Journal* of May 30th of the same year and in it, on page 1252, was an account by Major W. B. Leishman, R.A.M.C., of organisms identical with mine. I at once recognised the similarity of what Leishman called degenerations of the

trypanosomata to the bodies found by me in the splenic blood smear of the three cadavers above mentioned. Major Leishman discovered his parasites in November, 1900, in a smear taken post mortem from the spleen of a soldier who is said to have contracted the disease at Dum-Dum near Calcutta, and it was not till May, 1903, nearly two and a half years afterwards, that he communicated an account of his find. About the middle of June there was in my wards a native boy, Dorasami Mudali by name, aged 12 years, suffering from irregular pyrexia of two months' duration, enlargement of the spleen half way down to the umbilicus, no malarial parasites in his peripheral circulation, after very careful examinations of stained (Romanowsky) specimens, although there was a well-marked increase of mononuclear leucocytes. To discover the cause of the enlargement of this viscus and of the irregular temperature I punctured the spleen of this boy on June 17th, 1903, and found the bodies in the blood thus obtained identical with those found in the splenic smears post mortem. The forms were larger, more varied in appearance, and more clearly defined.

On June 18th I sent an account of my discovery to the *British Medical Journal*, which appeared in that paper on July 11th, 1903, page 79. Incited by Leishman's statement that these bodies were degenerations of the trypanosomata I carefully searched for this class (mastigophora) of the protozoa but without success, nor up to date has anything bearing the least semblance to these organisms been found. (For further remarks on this point see the critical portion of my paper.) I was at the time well acquainted with the appearance of trypanosomes, especially with the species Evansi, Lewisii, and one commonly existing in the blood of the Indian squirrel (Sciurus palmarum), so knew what to look for. On July 16th, 1903, I sent Ross three slides of these bodies (called for the time "Resistant bodies," as they resisted the action of quinine and indeed of all other drugs), together with two temperature charts of cases Nos. 1 and 2 and a water-colour painting. On Sept. 28th, 1903, I received their acknowledgment dated 9th idem and was informed that the slides would be carefully looked into next week. I sent M. Mesnil of the Pasteur Institute, Paris, on Sept. 23rd, 1903, a slide containing these bodies and asked for the favour of his obtaining Laveran's opinion as to their nature; to this I had a reply, dated Oct. 15th, 1903, and received by me on Nov. 1st, 1903, to the effect that he had examined the slides and had procured Laveran's decision, which was: "L'avis de M. Laveran est de plus net: il s'agit d'un protozoaire nouveau, du genre Piroplasma. Puisque la ponction de la rate est faite *intra vitam*, il ne saurait s'agir de formes d'involution de trypanosomes. M. Laveran écarté également l'idée de formes appartenant au genre Plasmodium, c'est à dire à l'hématozoaire du paludisme."

I received Ross's opinion on Nov. 9th, 1903. His letter is dated the 21st of the previous month and in it he says: "We have all studied your excellent preparations and I have read the articles by Leishman and you. I have also sent your drawings and specimens to Leishman and inclose a copy of his reply. You will see that he considers the parasites found by you to be the same as his. I think the bodies are certainly parasites but I cannot see any evidence at all that they are related to trypanosoma. ..... Hence I feel very strongly that the parasite is an entirely novel one and therefore consider that the discovery is one of great importance. ..... It is possible that the parasites are the cause of the fever in the cases, and this fever appears to me to resemble that of kala-azar."

In the *Bulletin de l'Académie de Médecine*, Paris, No. 35, séance du 3 Novembre, 1903, Laveran described my parasite and he and Mesnil gave it the name of Piroplasma Donovani. On Nov. 5th a contribution was sent by me to the *British Medical Journal*, "On the Etiology of One of the Heterogeneous Fevers of India," which appeared in that periodical of Nov. 28th, 1903, p. 1401. In this I stated that the bodies had been determined by Laveran and Mesnil to belong to the genus Piroplasma, species new.

The symptoms caused by these organisms appeared to me from the very commencement to be like those of kala-azar but not having seen a case of this disease of Assam I was chary of coming to any decided opinion. My students of their own accord often discussed with me, Manson's small book in hand, the similarity of the two ailments. With the hope of obtaining blood from the spleen of kala-azar cases I sent a letter on Nov. 10th to the *Indian Medical Gazette*, "On a Possible Cause of Kala-azar," which was duly published in December, 1903. In this I mentioned that the symptoms of my cases, which had then amounted to 17, tallied very closely with those of kala-azar and that I was led to believe the cause might be identical, and at the same time I requested medical officers in endemic areas to send me slides of smears of spleen juice or blood obtained by puncture *intra vitam*. On Dec. 23rd I received a wire, despatched on the 22nd idem, from Dr. C. A. Bentley of Assam to the effect that "similar bodies to those described by Leishman and you found *intra vitam* in kala-azar." This find of piroplasma in kala-azar was evidently the result of my letter to the *Indian Medical Gazette* of December. Subsequently Dr. Bentley very kindly sent me a slide containing the splenic blood of a case of kala-azar, in which piroplasmata Donovani were present in large numbers. Thus my surmise that these so-called malarial cases in Madras were identical with kala-azar was correct. In the beginning no definite parasites could be found in the peripheral circulation, but latterly I was able to procure them. I sent a slide containing blood from the finger of Case No. 23 to Laveran and Mesnil and they confirmed my opinion.[1]

In the peripheral blood the parasites are of a different form, very rarely found, and only when the temperature is high, between 103° and 104° F. On Feb. 13th, 1904, I found the organisms in ulcers of the skin of patients suffering from piroplasmosis. I was led to look for them in such skin diseases by the discovery of Wright (of Boston) of bodies very similar to, if not identical with, mine in scrapings from Oriental sore (Delhi boil). The most characteristic feature about this disease is an enlarged spleen, irregular pyrexia of from two to six months' duration unaffected by quinine, and the absence of malarial parasites in the peripheral circulation. To enter more fully into the chief symptoms they may be taken individually. The temperature is of an irregular type with occasional periods of apyrexia: in the beginning it is markedly intermittent, varying from 97° to 104°, of daily occurrence associated with shivering; in the latter stages it takes on more of a hectic type with night sweats. In a few cases the intermittent temperature occurs twice a day, morning and evening. When any complication is present, as pneumonia or cancrum oris, the pyrexia is continuous or subcontinuous. On occasions, without any recognisable cause, the temperature sinks to normal or subnormal and remains so for a week or ten days, rarely even for a month. The spleen is enlarged in the vast majority of the cases; in five only out of 72 was no enlargement of this viscus noticed. The enlargement is as a rule not very great, the spleen extending half-way down to and to the level of the umbilicus; in half a dozen cases did the extension take place into the pelvis. The size of the spleen varies according to the temperature; in some instances the variation in size has been marvellous. With fever the spleen has been below the umbilicus and in a week or ten days on the onset of apyrexia the organ has contracted and disappeared underneath the ribs. This diminution is but temporary; on the recrudescence of fever the former enlarged proportions are assumed within a few days. The liver is not so invariably affected in size; it was only in 28 cases that an increase in bulk was noticed, usually to the extent of from one to two inches below the costal arch. Diarrhœa was present in more than half the cases (40 out of 72); the motions were of a dysenteric character with slime and blood. This intestinal symptom was not always a constant feature but recurred with the severity of the disease. In the stools occasionally ankylostomata, rhabdonemata, and balantidia were found, but they apparently had no connexion with the disease. The large intestines were often the seat of ulcerations; their perforation gave rise to peritonitis and death in some cases.

Skin eruptions were very common. The skin was dry, furfuraceous, and covered in places with small ulcers simulating those in scabies; the marked pruritus consequent on these skin affections brought about in several cases an extension in size of these ulcers which had then, indeed, a great resemblance to Delhi boils. In ten of the number subcutaneous hæmorrhages or petechiæ were noticed, especially over the chest and leg; these came and went and were as a rule a prognosis of bad augury. In the greater number pigmentation of the skin in some form or other was detected on the palms of the hands and the soles of the feet; in a few cases was such a change observed in the

[1] Comptes Rendus des Séances de la Académie des Sciences, tome cxxxviii., 25 Janvier, 1904, p. 187.

buccal mucous membrane, the tongue, and the bulbar conjunctivæ. A general pigmentation of the skin of the whole body is better marked in light-complexioned Eurasians. In native patients who are not carefully tended or washed the dry furfuraceous skin remains on and becomes in time dirty and black looking. This is most probably the darkening or blackness of the skin spoken of in connexion with kala-azar. In two of my Eurasian cases the whole of the skin took on an icteric tinge a day or two previous to death. Cancrum oris, inflammation, and ulceration of the gums and hard palate, and very occasionally suppurative tonsillitis were observed in 22 cases; associated with these affections of the mouth and pharynx were four in which suppuration of the middle ear occurred.

A very constant feature of the disease is œdema of the feet; considerably more than half of my patients suffered in this way. In the majority bronchitis was present. Amongst other affections of the lungs there were 12 cases with pleurisy with serous effusion and one with hæmothorax and two had broncho-pneumonia. There was rarely ascites: only two cases were recorded. In another there was a considerable amount of blood in the peritoneal cavity; this was detected before splenic puncture and therefore was not due to that operation. As to the mortality, 22 died, eight were removed moribund, and the remainder were discharged at their own request, invariably in a much worse condition than on admission—indeed, few of these had any prospect of surviving more than a month or two. The causes of death were: six from general infection, one from cancrum oris, one from œdema of the glottis, six from diarrhœa, five from peritonitis, one from broncho-pneumonia, one from tubercle of the lungs, and one from hæmorrhage after splenic puncture.

The blood examination in cases of piroplasma infection always shows a marked decrease of the red blood corpuscles; these vary from two to 2,000,000 in the cubic millimetre. There is no actual increase of the leucocytes but a relative one of the mononuclears, much more marked than in malaria. In the subjoined table I give the result of the differential count of ten cases:—

—	1	2	3	4	5	6	7	8	9	10	Average.
P. ...	75·40	68·00	78·66	45·00	52·00	61·33	77·50	56·50	55·25	56·00	62·56
M. ...	14·00	6·00	12·00	46 25	42·00	17·33	13·50	17·50	22·25	25·00	21·58
T. ...	5·60	2·00	0·00	2·50	0·50	1·33	1·75	3·00	1·50	2·33	2·04
L. ...	2·80	22·00	8·00	5·00	5·50	19·66	2·00	10·00	10·00	6 33	9·22
E. ...	2·80	2·00	1·33	0·00	0·00	0·33	5·25	13·00	11·00	10·33	4·60

The urine contains albumin and invariably pigment. Quinine has been given by the mouth, hypodermically, and intramuscularly *ad nauseam*, with no appreciable result. The same may be said of other less suitable drugs—i.e., arsenic, salicylate of sodium, carbolic acid, creasote, tincture of iodine, &c.

The conditions found post mortem are generally an enlarged pigmented or unpigmented spleen; the liver is enlarged, congested, or cirrhosed—at times there is pigmentation present; and the intestines, especially the large, is deeply congested, inflamed, or ulcerated. Details of the necropsies will be found with the nine selected cases.

CASE 1.—The patient was a sickly thin boy, aged 12 years, who was born and lived at Periyamett, a part of Madras. He was admitted to my wards on May 20th, 1903, for enlarged spleen, liver, and irregular pyrexia. The fever was of a month's duration, with shivering. The spleen was noticed to be enlarged about three weeks before. He had occasional œdema of the feet. His spleen extended down to the umbilicus and the liver was half an inch below the costal arch. He gradually became thinner and weaker, with occasional attacks of dysenteric diarrhœa, and died on Nov. 15th, six months after his admission, with very severe cancrum oris and extensive petechiæ over his chest and abdomen. No post-mortem examination was allowed.

CASE 4.—The patient, a healthy-looking boy, aged 15 years, lived in Black Town, the most congested and insanitary part of Madras. He had had fever for 15 days before admission on July 29th, 1903. The spleen was enlarged half-way down to the umbilicus and the liver was an inch below the costal arch. His feet became swollen occasionally. He had had one attack of diarrhœa and latterly had suffered from bronchitis. He became thinner and weaker and was discharged on Sept. 18th.

CASE 14.—The patient, a very emaciated and feeble Eurasian, aged 24 years, had had a very long spell of fever which was first contracted in Rangoon. He had a huge spleen extending down to his pelvis and the liver descended below the umbilicus. The abdomen was completely filled up by these two viscera. There was marked mottling or pigmentation of the skin and there were occasional eruptions of petechiæ, epistaxis, slight bronchitis, and the usual irregular temperature with night sweats. I append the patient's own account of his case, dated Oct. 9th, 1903: "About very nearly four years ago I was appointed as clerk in charge of Segregation Camp, Rangoon. The camp was built on a disused paddy field just along the river bank. During my first four months' stay at the camp I kept very good health, but as we were getting deeper into the monsoon the condition of the camp became a proper marsh, there were standing pools of water, and the soil became so soft that it was with great difficulty one could walk. It was at this time I got my first attack of fever and was treated by the hospital assistant. I became worse and was compelled to get admitted in the Rangoon General Hospital; this was in July, 1900. I was about three weeks in hospital when I was discharged, having no fever. I resumed work and continued to work for about a week when I had a relapse. The second attack was more severe than the first and I neglected myself more as I was chary of asking for more leave. I became so bad, however, that the port health officer came to hear of it and ordered me into hospital which I obeyed; this was about the middle of August, 1900. I was not more than two days in hospital when the fever left me; this happened also on the first occasion. I therefore decided to resign my appointment and leave Burmah for good; this I did and landed here about the middle of September. I kept fairly good health here and was able to put on flesh. This, however, did not last long. I started getting fever till at last I got admitted into this hospital somewhere in October or November. I was the same here as in Rangoon. On the second day of my admission the fever left me and about ten days after I left the hospital. My next admission in this hospital was in June, 1901—fever again. After a stay of about a fortnight I left; my spleen then was slightly enlarged but not to such an extent to demand treatment. By this time I got tired of Madras and was determined to go back to Rangoon. I sailed here on Sept. 12th, 1901, arrived in Rangoon on Sept. 16th, and by Oct. 1st I was working in the agent's office, Burmah railways, my health greatly improved. I was forced to enter hospital, this time not with fever but with a bubo. I was operated on and cured and left the hospital on Jan. 10th, 1902. (I was admitted on Nov. 19th, 1901.) From this date my proper troubles about the spleen began. When I left hospital I had no job and had to rough it till I found living; in this style I began getting fever again. To make matters worse I took up a tally clerk's job—a job where you work aboard a ship either by day or night for 12 hours at a time subject to the heavy dews of night and the excessive heat by day. I managed to pull on with this up to the end of March, 1902, but had to throw up the sponge at last and seek admission in hospital in April, 1902. I was examined on admission and was told I had a spleen abnormally enlarged; this surprised me as not more than three months back my stomach appeared to be in no way affected. I was four months in hospital and left strong enough to take up a clerk's berth on board the B. I. S. N. steamer *Chilka*. I worked for about four months, put on some flesh, and looked and felt a great deal better. Since leaving hospital I took bad again with fever on one of our visits to Rangoon, and was forced to lay up again for a month; this was at the beginning of November. I got out again on Dec. 2nd, got appointed to another ship on the 9th, worked for another four months, got another relapse in March, got admitted again in hospital in April, 1903. Left in August for the Calcutta Hospital; stayed there for a month. Having found no improvement, came down to Madras on Sept. 7th; kept fairly good health for about ten days; gained seven pounds in flesh since leaving Calcutta. Got a relapse of fever about the 20th; became very bad about two days before admission here. Fever every night at 8 P.M., 104°. Monday morning, the 5th, I was admitted.

This is a true account of my case. I may add that although I kept good health on board my spleen was the same in size. As regards my mode of living when in Rangoon, I am ashamed to confess it was rather fast. I was inclined to be intemperate before joining the camp. On joining, fever and plague we made an excuse to drink heavy. On board ship it was worse. I drank the more whilst afloat than I did ashore. I put this down, as it may help you to find out the cause of my spleen and, besides, I wish to tell the whole truth."

It is difficult to state where this patient contracted his ailment. He probably had malarial fever in Rangoon and subsequently got piroplasmosis in Black Town, but this is mere surmise. He was in hospital for two months and left at his own request, weaker and thinner than on admission. He again sought admission in February, 1904, when he became much worse and died.

The post-mortem notes were as follows. The body was in an emaciated condition, the skin being yellow. There were petechiæ about the face, the side of the neck, the sides, and the back. There was pigmentation over the front of the shins. The abdomen was much distended. On opening the abdomen the spleen was seen to be greatly enlarged and occupying a large portion of the left side of the abdomen, as far down as the level of the iliac crest. The liver was also greatly enlarged and extended downwards in the axillary line, four inches below the costal region on the right side, so that the stomach was squeezed in between these two viscera. The spleen had an adhesion to the costal margin, the fibrous adhesion also extending to the posterior surface. The liver was very much enlarged, it being 13½ inches in length and 4½ inches thick. The surface was normal in appearance and pale; the gall-bladder was half full of bile. On section the liver substance was somewhat hard and "nutmeg" in appearance. The spleen was very much enlarged, it being 13 inches in length and three inches thick. The surface was smooth, while the substance was soft. There was a deficiency of fibrous tissue apparent on section. The right kidney was fairly large in size, the capsule being slightly adherent. On section the substance was pale, the cortex being thin and narrowed. The left kidney substance was pale, otherwise it was normal. In the stomach the mucous membrane was thick and congested, with a small amount of secretion of mucus near the pyloric end. The mucous membrane of the duodenum was congested. The contents of the small intestines were pale and white and the mucous membrane was deeply congested in parts. There was no ulceration present. In the large intestines there was congestion of the gut near the cæcum. The thorax was opened, there being no fluid in the pleural cavity. With regard to the heart the pericardium was apparently normal and the coronary arteries were normal. The left ventricle contained an old yellow clot which sent a prolongation between the chordæ tendinæ to a sacculated part in the auricle. The valves were healthy. The left ventricle was slightly hypertrophied. The right ventricle was thinned and contained an old yellow clot; the vessel walls were elastic. As regards the left lung, the surface had small flaky adhesions on the pleura. The bronchial glands were slightly enlarged. There was a good deal of emphysema on the edges of the lung. A section of the lower lobe revealed an appearance very much like that of liver substance. The lung was very dense and pliable. The section of a portion of this lobe sank in water. There was no exudation. The section of the upper lobe floated in water. As regards the right lung the surface was smooth. The appearance of the substance was smooth and there were no adhesions. A section of each of the lobes floated in water. The skull was opened and the dura mater was found to be pigmented with bile. The brain substance was normal. There was clotted blood in the longitudinal sinus. The brain surface was congested. The left lung weighed 36 ounces, the right lung 17 ounces, the spleen 80 ounces, the liver 126 ounces, the right kidney eight ounces, the left kidney seven ounces, the brain 50 ounces, and the heart five ounces.

CASE 15.—The patient was an emaciated young man, aged 20 years, who worked in a cotton mill in Madras. There was a history of fever off and on for six months. There were enlargement of the liver and spleen, dysenteric motions, a temperature varying from 99° to 102° F., ulceration of the gums over the last two upper molars of the left side, and ulcers on the outer side of the left knee and one in the gluteal region of the same side. He died on the twenty-first day after his admission.

A post-mortem examination was held by Captain H. Kirkpatrick, I.M.S., and the following notes were recorded. The height of the patient was 5 feet and he weighed 76 pounds. On the abdomen being opened the intestines were found to be semi-distended and pale and the abdominal cavity contained about six ounces of darkish yellow fluid. The omentum was pigmented and the parietal peritoneum had also pigmented patches. The lower part of the ileum was coiled and twisted in the right iliac region, the coils being bound to each other and to the ascending colon by adhesions of a firm nature. The vermiform appendix was healthy. The thorax was opened. The pleural cavity contained a small quantity of fluid. There were some adhesions on both sides. The left lung was adherent to the diaphragm. The pericardium contained two and a half ounces of clear fluid. With regard to the heart, the left auricle was the only chamber that contained any blood, this being of a dark fluid nature. The endocardium was healthy. The valves were competent and the coronary arteries and the heart muscles appeared normal. The trachea vessels were dilated and full of blood. The pretracheal and bronchial glands were enlarged. As to the lungs, the middle lobe was absent in the right lung; the pulmonary veins were full of blood. A section of lung tissue was moist, dark, and firm. The intestines contained a quantity of dirty grey semi-fluid material. The transverse and descending colon were covered by a number of small dark red purple ulcers which were mostly discrete, but in places they ran together; these extended as far as the muscular coat and there was a little thickening around them. In the washings a number of sloughs were found. The jejunum was congested in places. The rectum contained some blood-stained fluid and the sigmoid flexure showed up the same appearances as the colon. The spleen was enlarged, its weight being 49 ounces, and it was shapeless, soft, not very moist, dark, and pigmented. The liver was large, it weighed 72 ounces, and was dark and flabby. On section the substance was rather friable and showed pigmentation with small specks of yellow colour intervening, uniformly spread all over the viscus. The colour of the kidneys was yellow and pale and the capsules stripped easily. The cerebral vessels contained a small quantity of blood. There was slight pigmentation at the base of the brain. The brain substance was very soft; otherwise nothing abnormal was noted.

CASE 18.—The patient, a puny, wretched-looking man, aged 25 years, lived in Black Town. He was admitted for dysentery and after being eight days in hospital he died from peritonitis. He had had fever off and on for six months before admission.

At the post-mortem examination made by Captain Kirkpatrick the height of the patient was found to be 4 feet 4 inches and his weight 52 pounds. On the abdomen being opened the intestines were seen to be distended. The vessels on the surface of the small intestines were congested. The cavity contained about 5 ounces of clear yellow fluid. The liver surface was covered with thin flakes of lymph. The omentum and transverse colon were adherent to the anterior wall. There were signs of old peritonitis. On separating the abdominal wall gently a perforation, the size of a pea, was found on the anterior surface of the transverse colon and the sigmoid flexure was adherent to the anterior abdominal wall. The ileum showed areas of inflammation, having dark-red ecchymosed patches; its wall was pigmented. In the large intestine were a number of chronic ulcers, the edges of which were much raised and thickened and their floors were covered with thick yellowish slough. Some of these extended through the whole wall of the gut. The spleen was large, its weight being 21 ounces, and the capsule was thickened in patches. There was a small white infarct on its anterior border. The section was dark and the substance was firm. The liver weighed 33 ounces, the surface being irregular and covered with small adhesions; there were patches of thickened capsule. The section was tough and very dark and there was an excess of fibrous tissue and pigment.

CASE 23.—The patient, a sickly-looking mendicant, aged 25 years, lived in Black Town. He had had fever and œdema of the feet for two months. His temperature was of a most marked intermittent type. The chart is appended. He had had occasional petechiæ and swellings of the feet with bronchitis. Latterly he had greatly improved; his spleen had decreased in size almost to normal, the œdema of the feet had left him, and the temperature was very little above normal. But this false improvement did not last. He was

discharged very weak on April 4th after four months in hospital and has since died.

CASE 24.—The patient was an emaciated, very dark-complexioned man, aged 35 years, who lived at Black Town. There was a history of two months' duration with dysenteric motions. He had been three months in hospital suffering from typical pyrexia, dysenteric motions, cough, œdema of the feet, and soreness of the mouth. The peculiarity about this case was that the spleen and the liver were not enlarged and it was with some difficulty that the spleen could be punctured. The patient died and at the necropsy the following special features were noted. There were 14 ounces of blood-stained fluid in the abdominal cavity. The parietal peritoneum, especially in the pelvis and sides, the mesentery and the omentum, was covered with numerous petechial spots of recent origin, some of which, however, appeared old, like miliary tubercles. The lower part of the large intestines was inflamed and ulcerated. The spleen was normal and of a brownish-pink colour and non-pigmented. The liver was very slightly enlarged, congested, and without pigment. The suprarenals were enlarged. The other viscera call for no mention.

CASE 26.—The patient was a very sickly and emaciated boy, aged 14 years, who lived in the north of Black Town. He had had fever irregularly for two months, with sore mouth, diarrhœa, and œdema of the feet. The spleen and liver were slightly enlarged. He was admitted into hospital on Dec. 1st, 1903, and kept fairly well until the 21st, when the symptoms of the disease became worse and he died on the 30th from œdema of the larynx.

The following are part of the notes taken. On Dec. 21st the œdema of the feet was increasing, and the patient had a troublesome cough with expectoration. On the 25th he had three sores, about half an inch in diameter, on and round the left knee, resembling those caused by scratching pustules of itch. The œdema of the left foot was much less. The patient complained of pain in the left ear with a buzzing noise. On the 28th there was a discharge of pus from the left ear and marked swelling below the ear which extended down the neck. On the 29th pus was discharging from both ears. The left tonsil was very much congested, with a dirty-looking slough and œdema of the fauces. The swelling had increased over the left jaw and the neck and was very painful to the touch. On the 30th, at 3.30 A.M., he had great difficulty in breathing. The neck was much swollen; there was a profuse purulent discharge from both ears, as well as marked œdema of the fauces with almost complete closure of the isthmus faucium. The slough on the left tonsil had spread. Tracheotomy was performed at 8 A.M. and the patient died at 10 P.M. The temperature was of an intermittent type throughout, varying from 98° to 104° F.

At the post-mortem examination the spleen was found to be enlarged, it weighed 16 ounces, and was slate-grey in colour, and pigmented. The liver was adherent to the stomach and the duodenum, weighing 48 ounces, and "nutmeg" in appearance. The kidneys were normal. The large intestines were healthy but the ileum was congested.

CASE 65.—The patient, aged 21 years, a hospital assistant from Bassein, Burmah, was admitted into hospital very ill on April 20th, 1904, suffering from continuous fever with a temperature of about 103° F. and with enlarged spleen and œdema of the feet, coupled with purulent discharge from both ears. The fever kept more or less continuous to the 27th. On the morning of the 28th creasote was applied to the axilla and the temperature dropped in an hour to normal to rise again in the afternoon. Similar applications were made on the two following days with the same effect of reducing the temperature for a short time. After this artificial means of lowering the pyrexia the fever became of a marked intermittent type and came down to normal on May 12th (*vide* the accompanying temperature chart). During the last week of the pyrexia the spleen became gradually smaller and smaller and on the 15th it had attained its normal size. From May 12th to the date of his discharge (June 9th) the temperature kept more or less normal. The patient left the hospital apparently cured. He had picked up weight, was able to walk about, and ate heartily. Slight œdema of the feet however, came on in the evenings. This is the only case in which I have noticed such marked improvement. I am afraid it is only illusory and I expect him back again with fever.

Case No. 23 had a similar lapse to apparent good health. The comparison of the two temperature charts is instructive.

The patient in Case No. 65 is a native of Tellicherry on the Malabar coast and had never had any fever until he went to Bassein in Burmah about a year ago. The history of the illness as given by himself is interesting, and I herewith subjoin it: "I joined duty in Bassein Hospital on June 1st, 1903, worked till about the middle of October, when the first attack of fever commenced. I was admitted in hospital; the fever lasted for 21 days. *Character of the fever.*—Morning temperature between 101° and 102°. Evening temperature between 104° and 105°. After the fever stopped I remained in hospital till Nov. 21st, on which date I was discharged from the hospital. I joined duty the next day in Bassein Hospital and worked till Dec. 10th when I was again attacked with fever. I was admitted in the hospital. The fever was of the same type as before. I was so bad that I asked Major Castor to send me to Rangoon General Hospital thinking that a change of place would do me good. Accordingly I was sent to Rangoon General Hospital on the 23rd or so of December. A week after I was admitted into the hospital the fever stopped. I was in the hospital till Jan. 16th on which date I was discharged with ten days' casual leave. I was called back to Bassein. I remained at home till my leave expired. On Jan. 26th I got another attack. I was again admitted in the hospital. The fever never stopped, so Major Castor recommended me for a transfer to the Rangoon General Hospital. I was in the Bassein Hospital till Feb. 13th, on which date I was sent to the General Hospital, Rangoon. The fever never stopped even there. I was so bad that the doctor said that I should take sick leave and go home. I was granted six months' leave. I remained in the General Hospital till March 4th, on which date I was discharged. But I missed the steamer the next day and consequently had to stay with a friend for seven days. Two days after I left the hospital the fever stopped but I had swelling and œdema of the feet and ankles. I caught the next steamer on March 12th and reached Tellicherry on the 15th. In the steamer the swelling and œdema disappeared after one or two sea baths. On reaching home I had a severe cough, so I went to Calicut and got myself examined by the district surgeon. He did not tell me what I was suffering from but asked me to remain in the hospital. I remained for a day but in the night I was very much troubled by the bugs, so the next morning I asked the doctor for leave to go home. He consented and I went home, took some cough mixture, and was all right a few days. But after a few days I got this present attack and I came to Madras and got admitted into this hospital on the 20th of this month."

From the date of first finding the piroplasma in the blood of the spleen taken by puncture during life I practised this small operation in all cases in my wards suffering from irregular pyrexia and enlargement of the spleen. During this period 110 punctures have been made; the cases in which piroplasma was not found contained either the gametes or the latent forms of the genera Plasmodium and Laverania; in others no recognised organism was detected. Amongst this number the enlarged spleen in three cases of leukæmia was also punctured; this attempt was made to discover Löwit's parasite, Hæmamœba leukæmiæ magna vel parva, with ineffectual results. The puncturing of the spleen had, as a rule, no ill effect. I regret, however, to report the death of one case undoubtedly consequent on the operation. The facts are: Patient No. 22, a fairly healthy, big-boned man, was punctured at 8 A.M. He remained quite well till 3 P.M. when he was allowed to get up and leave his bed. While walking in the verandah to get a drink of water he slipped and fell and was picked up in a dazed condition. At 5 P.M. he was noticed to be very bad, gasping for breath, and in a few minutes he expired. A post-mortem examination showed extensive hæmorrhage into the peritoneal cavity, obviously from the spleen puncture. The capsule of the spleen, an enlarged one, was greatly thickened and the pulp was unusually diffluent. Since this regrettable accident patients were kept for 24 hours flat on their backs and were not allowed to leave their beds; at the same time chloride of calcium was administered in a 15-grain dose immediately after puncture and repeated twice at intervals of three hours. The results so far have been satisfactory.

The number of organisms in the blood taken by splenic puncture during life varied from one to 30 or more in a field (Zeiss's apochromatic objective two millimeters and compensation eyepiece No. 4). In some instances the slide had

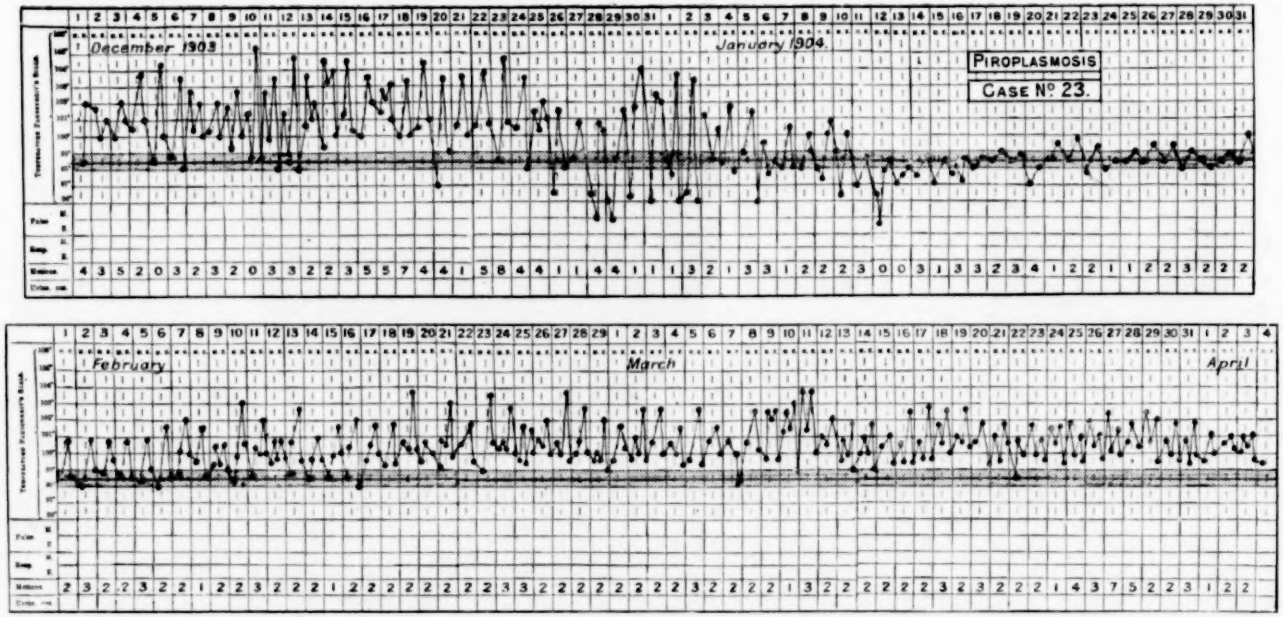

Chart of Case 23.

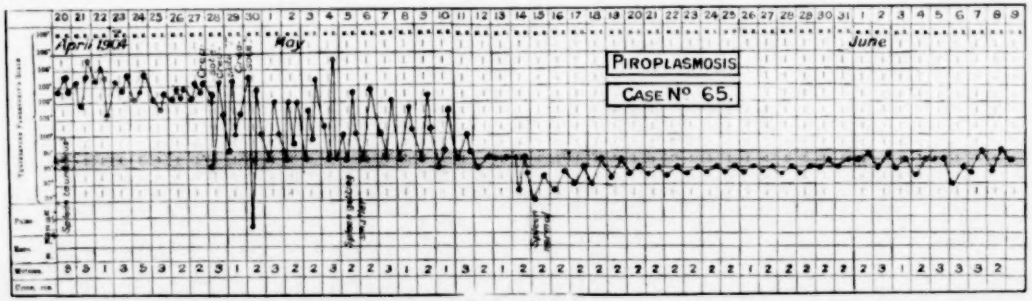

Chart of Case 65.

to be examined for a quarter of an hour before half a dozen parasites were found. The number, although varying with the amount of blood taken up in the syringe, is not dependent on the severity or otherwise of the disease or the size of the spleen. Patients very ill and with marked high pyrexia may have but few and, on the other hand, mild cases with no appreciable rise of temperature show the piroplasmata in large numbers.

[We have received a letter from Major Donovan stating that an appendix to this paper has been addressed to us, but as it has not arrived we think it better not to delay publication.—ED. L.]

EPIBULBAR MELANOTIC SARCOMA.

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PIGMENTED epibulbar tumours situated at the limbus are of sufficient rarity to make the present case merit report. Holmes found three cases during the examination of 20,000 eye cases; Noyes observed three melanotic sarcomata amongst 70,000 eye patients; Adamück mentions the occurrence of similar pigmented growths in three out of 16,000 eye cases; Verhoeff and Loring report two such tumours which were met with during the routine examination of 44,719 eye patients, while amongst the 520,523 out-patients who have attended at the Manchester Royal Eye Hospital during the last 33 years three cases of pure melanotic sarcoma of the limbus have been recorded, although general "orbital melanosis" has been more frequently noted.

A woman, aged 54 years, on admission to the hospital on Feb. 7th, 1903, related the occurrence of "inflammation" in the left eye some 18 months previously. Nine months later she noticed the presence of a small "black" tumour which gradually increased in size and "grew" towards the middle of the eye. On examination separation of the left lids revealed a large greenish-black fleshy mass situated at the outer and upper part of the corneal limbus. Its size and location are fairly well shown in Fig. 1. It was of nodular appearance and firm consistence and was apparently directly attached to the underlying conjunctiva and cornea since a probe could not be passed underneath its margin at any point. The conjunctival vessels were injected and from the upper border of the growth dilated vessels emerged. The unaffected portion of the cornea was clear and to outward observation perfectly normal. The posterior surface of the affected area appeared as a greyish-white patch when the eye was tilted upwards as far as possible and the ophthalmoscope was held far down. After dilatation of the pupil the fundus could be fully observed; it showed nothing abnormal. Vision with undilated pupil = $\frac{6}{6}$ Jaeger 16 + 1 D. = $\frac{6}{6}$ + 4 D. = J. 16. The movements of the globe were normal, although they were to a slight extent impeded by the neoplasm. The intraocular tension was not raised. The right eye was quite normal. Vision, V. = $\frac{6}{6}$ + 1 D. = $\frac{6}{6}$ + 4 D. = J. A diagnosis of melanotic sarcoma was made and enucleation of the eye was advised and performed, the optic nerve being severed as far back as possible and the greater part of the ocular conjunctiva removed at the same time. In April, 1904, the patient wrote saying that she was in "good health" and that the eye was "free from pain and discharge."

After removal the eye appeared to be of normal size, shape, and consistence. At the outer and upper angle a dark-coloured growth (one centimetre long, 80 millimetres broad, and 40 millimetres deep) extended from the limbus to the middle of the cornea. Its surface was uneven and the pigment unequally distributed. On section, it was at once evident that the retina, lens, and anterior and posterior chambers were all normal. The relation of the growth to the cornea, conjunctiva, and sclera is shown in Fig. 1. Microscopically the tumour presented the usual characters of a melanotic sarcoma. There was a somewhat unusual amount of fasiculation, suggesting a relation with the sclera: the newly formed blood-vessels were dilated and might almost be termed "sinuses." Numerous hæmorrhagic areas were scattered throughout the mass which consisted principally of

FIG. 1.

Section of anterior portion of eye passing through the growth. The tumour is seen to arise at the limbus and to cover half the cornea. Low power. (Zeiss A.)

round and stellate cells with a few spindle cells here and there The pigmentation was intracellular but by no means general and occurred in discrete patches. The growth was covered externally by a thin layer of flattened cells apparently continuous with the conjunctival epithelium posteriorly and at its advancing edge derived from the superficial layer of the cornea under which it appeared to burrow (Fig. 2),

FIG. 2.

Section showing the advancing edge of the growth, the burrowing of the corneal epithelium and its relation to the substantia propria.

while internally it rested directly upon the sclera and substantia propria of the cornea. At the corneo-sclerotic junction the cornea showed slight cell infiltration and was more pigmented than the other portions covered by the tumour. In the plane of section a direct connexion between the ciliary portion of the retina and the tumour did not exist but the pigmented layer was very irregular and there appeared to be some thickening of the pars ciliaris retinæ which extended further backwards in the region of the tumour.

The majority of the previously reported epibulbar growths have presented epithelial characters, the minority consisting of sarcoma cells alone or of sarcoma and epithelial cells. The present case belongs to the second group. In regard to their position, three-fourths of the total number originate from the bulbar or ocular conjunctiva, the remainder arising

at the limbus. All present the tendency to spread superficially and, as a rule, do not invade the resistant tissues of the sclera nor the deeper layers of the cornea. When, however, extension does occur the exact route is difficult to determine. Adamück and Verhoeff and Loring consider that a direct perforation of the scleral tissues is possible but Michel thought that in one case extension took place along the perivascular canals of the ciliary body. Epibulbar sarcomata are generally met with in late middle life, the majority of cases occurring in adults aged 50 years and onwards; three cases, however, are recorded in which melanotic sarcomata of the limbus were observed in children aged eight, 11, and 14 years respectively. As causal factors traumatism, irritation and congenital ocular melanosis are generally mentioned. In this case there was certainly some indefinite "inflammation" 18 months previously, but there is really little definite evidence which can be cited in support of any of these associated conditions.

The chief discussion in regard to the epibulbar sarcomata has been directed to the extent of their malignancy and its relation to treatment. For the greater part it has been held that these growths extend but slowly and superficially, rarely recur after removal and, as a rule, do not produce metastases. The treatment of removal of the tumour, thorough scraping of the subjacent tissues, followed by cauterisation of the affected area and, if necessary, the removal of a portion of the conjunctiva has thus been largely adopted and when the neoplasm has been diagnosed and removed at an early stage usually neither recurrence nor metastases have occurred. In this case, however, although the growth was circumscribed and apparently superficial, the gradual advance over the cornea, the consequent limitation of the visual field, and the comparatively large size of the nodule all suggested the need of more radical measures. Verhoeff and Loring have recently investigated this question of malignancy in epibulbar sarcomata and in an analytical survey of 73 cases they point out that in 53 cases in which primary abscissions were performed recurrence followed in 36 of the patients. In ten of these the growth reappeared within one year, in three within two years and in the remainder within six or ten years and onwards. Distinct metastatic nodules were observed in seven cases, while in five other cases nodules also appeared in the orbit or on the lids. Further light upon this question is shed by the statement that in 19 cases of primary enucleation for melanotic sarcoma of the limbus the interior of the eye was involved in three cases, while in three other cases there were general metastases in the internal organs. It would thus appear that except when melanotic growths are very small, circumscribed, or pedunculated, superficial removal and scraping is attended by a certain amount of risk and the possibilities should certainly be fully explained to the patient and the case kept under strict observation for a considerable period.

We append the details of two cases hitherto unrecorded.

The first case was that of a woman, aged 39 years, admitted under the care of the late Dr. Little in 1901. Six or seven years previously a small blood-shot speck was observed. During the preceding seven or eight months this had gradually increased in size. On admission the left palpebral conjunctiva was injected and a small tumour was present. It was divisible into a central round cystic-looking body and two lateral melanotic infiltrations of the conjunctiva. The edge of the cornea adjacent to the tumour was infiltrated with melanin (?). The tumour was excised. No post-operative history was obtainable as the patient had left her then address.

The second case was that of a private patient, aged 54 years. When first seen in October, 1900, a dark-coloured tumour of about the size of a pea was attached by a broad pedicle to the upper and outer corneal limbus. It had been growing more than two years. It was at once removed and the point of attachment was cauterised. It recurred at a slightly lower position on the limbus about eight months later but no operation was undertaken till November, 1903, when the same procedure was gone through. It has now (May, 1904) again recurred and presents a somewhat lobulated pink mass of hard consistence and showing no pigment, is of the size of a small hazel nut and is situated again a little lower than the previous growths. The diagnosis was confirmed by microscopical examination of the first tumour. The eye to-day is otherwise quite normal and possesses perfect vision. The patient is in robust health.

An extensive bibliography of the subject is given in Verhoeff and Loring's paper in the *Archives of Ophthalmology* for March, 1903, p. 97. The under-mentioned are included as additional papers.

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Manchester.

ON RUPTURED URETHRA: ITS TREATMENT BY COMBINED DRAINAGE (SUPRAPUBIC AND PER URETHRAM).

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SIX years ago [1] I discussed the mechanism of this injury, distinguishing cases of direct and indirect violence, and its effects immediate and remote—retention, extravasation of urine, and stricture. Exception was taken to the view of Iversen that the occurrence of extravasation was due to the action of the deep transversus perinei in ruptures posterior to this muscle. I described three cases which had come at the outset under my care. These I had been able to keep under observation for from 18 months to three years. They were all produced by falls astride of a hard object; all were attended by the formation of a swelling in the perineum due to extravasation of blood and inflammatory processes, in none to extravasation of urine; all were treated in the same way—viz., by incision down to the injured urethra to evacuate clots and inflammatory products, and by combined drainage of the bladder, suprapubic and per urethram. In two of these cases (adults) the results were highly satisfactory, the patients being at work and in enjoyment of good health at a period of over three years from receipt of the injury. In the third case, that of a boy, aged ten years, there was difficulty in carrying out the treatment, as I was unable to give him the personal attention which fell to the others. Some leakage of urine took place alongside the catheter with the result that the urethral wound did not heal as in the others, and early stricture formation occurred. Three months later resection of the stricture was done, the ends of the urethra were united by catgut sutures, and the bladder was drained suprapubically; no catheter was used per urethram. Seven years after this the boy was well and at work, with no urinary symptoms, and resting all night. Bougie No. 13-16 was passed without difficulty.

Since the publication of the paper referred to four other cases of rupture of the urethra have been treated by me in the same manner; of these, the first three belonged to the same class of direct injuries, the fourth resulted from a crush, the exact mechanism of which was obscure, but which had produced a fracture through the body of the pubis close to the symphysis, and there was here complete division of the urethra "close in front of the prostate." This case, the most unpromising of any that I have seen in the early stage, has given a result equally good with any of the others. The patient was recently examined by me 16 months after the injury. I found him in the enjoyment of his usual health doing his work as before the accident, passing urine without difficulty or any increased frequency, and resting all night undisturbed. On examination it was found that conical bougies could be passed without pain or drawing blood up to No. 14-17. This patient is of special interest in regard to the

[1] Glasgow Hospital Reports, vol. i., 1898.

question of sutures to the injured urethra. If in any case of primary treatment sutures are indicated it was surely so in him. That I did not use them was owing to the strongly expressed opinion of Mr. D. N. Knox to whose wards the patient had been admitted, and in whose absence I dealt with the case to begin with. It was my intention to have sutured the urethra at the first dressing, although at that date four or five days after I had placed the drains in position he was going on quite satisfactorily. This would no doubt have involved some disturbance of the wound and I can only point out that the result has given me no reason to regret that the suturing was left undone.

The only case of the seven (that of the boy aged ten years) in which sutures were applied, except after resection, was, as has been stated, followed by stricture, and without charging this upon the sutures I am inclined to believe that they are an unnecessary complication of the healing which is to be looked for from the use of the procedure described, where the divided ends of the urethra lie in contact on a soft catheter when the patient's limbs are extended, though they may be widely separated when he is in the lithotomy position. It would seem that there is no great tendency of the torn ends to retract, and this is in keeping with what is known of the distribution of circular and longitudinal muscular fibres from the internal meatus forwards into the beginning of the spongy portion. How far the urethra is fixed behind the triangular ligament and in the region of the bulb it is hard to say, but it is not lying free like an artery.

Of the other cases of the second series, one (Case 4) has lately reported himself well and free from urinary troubles of any kind, six years after the injury. He is now a man of 24 years and was married over a year ago. A second (Case 6), a man, aged 38 years, was last seen 18 months after his accident, when he was quite free from symptoms, and with a urethra admitting conical bougie No. 13-16 without difficulty. The third case (Case 5) is of interest as illustrating three points: 1. The early development of stricture as the result of an injury which had caused bleeding without actual retention of urine at the time. (Treated by resection.) 2. The difficulty of keeping up a constant drainage per urethram by a catheter *à demeure* where phimosis conduces to urethritis. 3. The good result which may be obtained from resection for such a stricture. In this case, as in the previous one (Case 3) of resection, there resulted a stricture appreciable on the passage of bougies so that three months afterwards, and again a year later, No. 11-14 was the largest size that could be passed without violence; but the patient was in no way sensible of difficulty, and two years after the resection he was going about his work without giving any thought to the old injury.

Puncture of the bladder in its distended condition is easily done and this is the first necessity of the patient to relieve his distress and to obviate the extravasation of urine while it makes possible the introduction of a guide from the side of the bladder (retrograde catheterisation) if difficulty should be experienced in finding the proximal end of the urethra in the perineal wound. (For this the puncture must be done, say, 48 hours before the perineal operation.) This difficulty, I do not think, need be considered serious if the perineal wound is well opened out and wiped clean in a good light. Pressure suprapubically to expel a few drops of urine may be of use in localising the stump of the urethra. To avoid violence the skin is to be incised with a knife and a cannula of such a size is to be used that on withdrawing its trocar a No. 9 or 10 soft rubber catheter can be passed into the bladder and fixed to the skin by a small collodion dressing. A soft rubber catheter is passed per urethram and fixed to the skin of the penis by collodion-gauze, care being taken not to encircle the organ (see illustration). The catheter should be the

Soft rubber catheter secured to skin of penis by gauze and collodion.

largest that the urethra will admit and, if necessary, the meatus is to be incised for its accommodation. Urethritis may ensue specially in presence of a long prepuce, but cleanliness about the glans and the perineal wound will go far to prevent this. The presence of a large catheter gives what I am convinced is a valuable means of bringing the divided ends into proper contact and keeping open the lumen during the process of healing. The perineal wound is to be packed or only sutured so far as to support the torn urethra in proper position; drainage is essential to the rapid recovery of the bruised tissues. The procedure may be contrasted in its results with those obtained by (1) simple catheterisation; (2) drainage by a perineal tube; and (3) immediate suture of the damaged urethra without suprapubic drainage and without the support that is afforded by a soft catheter in the urethra while healing is going on. The two former procedures have nothing in view but relief of the existing retention, and ignore, if they may not be said to conduce to, stricture formation. The last mentioned involves two evils—the presence of sutures in or near the urethra itself and their introduction into tissues that cannot be expected to hold them.

After the publication of my previous paper I found that the method of suture of the urethra with suprapubic drainage, but without a urethral catheter, had been proposed by Mr. H. Gilbert Barling,[2] and later Mr. C. J. Bond of Leicester reported a case so treated. Mr. Barling's experience of urethral drainage had been with a metal catheter. I think that the use of a soft rubber instrument makes a material difference. It is much less irksome to the patient, equally or more efficient as a drain and free from danger to the bladder from pressure. I have also used the combined method of drainage and support to the urethra after external urethrotomy for stricture of gonorrhœal origin and am satisfied that here also it is of value. The patient is kept dry and his perineal wound heals more readily and with more lasting benefit.

CASE 1.—The patient, a man, aged 33 years, was admitted to Ward 23 of the Glasgow Royal Infirmary on June 16th, 1894, 24 hours after injury. This was produced by a blunder in mounting a bicycle. He struck his perineum on the guard of the hind wheel. There had been retention since the injury and swelling in the perineum. Suprapubic tapping and drainage were performed at once. Six days later an incision was made in the perineal swelling in which suppuration had taken place. Drainage per urethram and suprapubically was made for about ten days in each case. He reported himself well in November, 1897, when there were no symptoms. He was passing a bougie once in ten weeks. He died in November, 1900, without manifestations of urinary trouble. It was said by his medical attendant that he had died from drink.

CASE 2.—The patient, a man, aged 33 years, was admitted to Ward 20 on Sept. 22nd, 1894, having some hours previously fallen astride the back of a chair. There was retention and perineal swelling. Suprapubic drainage was established. Two days later the perineal swelling was cut down upon and clots were turned out. With difficulty, the urethra having been completely torn across, a soft catheter was passed and fixed to the penis. Five days later the suprapubic drain was withdrawn but the urethral catheter remained until Oct. 12th (18 days) when the perineal wound was found to be healed. On the 19th the patient was sent home. About a week afterwards he complained that urine was not flowing so freely as at first. This would seem to have been due to a temporary swelling of the mucous membrane, for on Nov. 13th it was noted that bougie No. 20 (English) was passed without a hitch and there was no difficulty in micturition. In December, 1897, he was examined again; there were no symptoms and bougie No. 17-20 was passed at once with only a slight hitch. This man could not be traced later.

CASE 3.—The patient was a boy, aged ten years, who was admitted to Ward 25 on Sept. 16th, 1896, having that afternoon fallen astride an iron rail on which he was walking. He was seen by me three hours later, when I found retention with a distended bladder and a perineal tumour, limited in size but with extensive ecchymosis over the scrotum on to the abdomen, also down both thighs. Being unable to pass a catheter I at once punctured the bladder above the pubes and fixed in a drain. Two days later I cut down on the urethra which was torn in front of the triangular ligament. The injury was dealt with as in Case 1, with the exception that two catgut sutures were used to bring the ends of the urethra together over the soft catheter. It was noted that a guide introduced by the suprapubic wound was of service. In this case drainage was not quite satisfactory, urine

[2] Birmingham Medical Review, 1891, vol. ii., p. 321.

escaping by the perineal wound and the boy having a good deal of pain. 11 days after admission the suprapubic drain was withdrawn and on the following day the urethral one. On Oct. 21st the patient was dismissed well but with a stricture which admitted nothing bigger than No. 5–8 Lister. On Nov. 30th the boy was brought back by his mother with the statement that he had difficulty in passing urine, spent a long time over it, and was wetting his bed at night. The bladder was found distended; urine was dribbling away and on a first attempt no instrument could be passed. On Dec. 12th, under chloroform, a whalebone guide was passed and the stricture was dissected through and cut out (for about three-eighths of an inch). The ends of the urethra having been dissected free were brought together by catgut sutures over a catheter, which was then withdrawn. Before beginning the resection the bladder was punctured for a drain as usual. The suprapubic drain did well. It was noted on Dec. 23rd that he passed urine occasionally per urethram and that some had come by the perineal wound. The suprapubic drain was withdrawn. On the 28th both wounds were soundly healed and the patient passed urine in a full strong stream. Bougies could be passed in easily up to No. 10–13 though there was an irregularity in the urethra opposite the middle of the scar. On Jan. 13th, 1897, he seemed to pass urine easily enough but for the last two nights he had been found wet in bed by midnight. On Feb. 8th he was at home again and had to be awakened to empty the bladder or he would pass urine in bed. Bougie No. 9–12 was passed with a slight hitch. This incoördination passed off and in October when he came by request for examination there was no inconvenience. On May 12th, 1901, the boy was in good health and without symptoms; bougies were passed up to No. 13–16. On March 6th, 1904, being at this time nearly 18 years old, he was at work, in good health, and without symptoms. Conical bougie No. 13–16 was passed without difficulty. The penis was well developed.

CASE 4.—The patient, a youth, aged 18 years, was admitted to Ward 25 on April 7th, 1898, having bruised the perineum against the rung of a ladder. Here the injury was compound, there being a tear running outwards into the right buttock. The treatment was as in the previous cases. On April 19th, after withdrawing the catheter, it was noted that there was a considerable escape of urine by the perineal wound, but this soon healed and he was dismissed on May 16th with both wounds healed and able to pass urine freely. He was examined on May 10th, 1901. There were no symptoms and he was in excellent health. Bougies up to No. 10–13 were passed as before. On Feb. 10th, 1904, he reported himself well and free from symptoms and was at his usual work. At that time he was 24 years old and had been married more than a year.

CASE 5.—The patient, a man, aged 38 years, was admitted to Ward 25 on August 11th, 1900. Four months previously he was kicked in the perineum from in front. Not much swelling formed but discolouration showed itself and oozing of blood went on for about three weeks. He had no actual retention, but there had been gradually increasing difficulty in micturition and he had to rise three or four times in the night. On examination it was found that medium-sized bougies were stopped about five and a quarter inches from the meatus and the point of the instrument could be felt from the perineum to enter a mass, the posterior extremity of which became lost in the bulb. It would seem that the worst part of the stricture was about one and a half inches in front of the triangular ligament. On August 17th, 1901, the strictured portion was resected; it was shorter than had been supposed, the part removed not being more than half an inch long. A complete section of the corpus spongiosum was removed for that extent. Seven or eight fine silk sutures were used to bring the cut ends together, care being taken that they did not pass into the lumen of the urethra. Combined drainage was established. Eight days later the urethral catheter was withdrawn and a few days later the suprapubic one. There had been only a trace of urine escaping by the perineal wound but there was a considerable extravasation of blood which formed a hæmatoma in the scrotum. On Sept. 18th both wounds were sound. The patient could pass urine in a good stream and was not disturbed during the night. On Dec. 7th No. 10–13 was the largest size of bougie that could be passed without violence. The patient was free from troubles of any kind. On May 17th, 1902, his condition was the same as when last noted. On July 23rd he was well and free from symptoms.

CASE 6.—The patient, a man, aged 38 years, was admitted to Ward 25 on Sept. 27th, 1900. Four days previously he fell on the leg of an upturned stool which caught him between the legs, immediately after which blood began to ooze from the urethra and this had persisted since, showing itself at the beginning of micturition. Pain and swelling had for the most part disappeared, though there was ecchymosis from the scrotum to the tip of the coccyx. On the 30th a metallic catheter was passed with some difficulty and the bladder was distended, after which it was punctured and drained. A staff was then cut down on in the perineum and the urethra was found to be torn on its perineal aspect just in front of the triangular ligament. There was no wide tearing of tissues, but a pocket ran backwards under the proximal portion of the urethra from which oozing was rather free. Double drainage was established as usual and was carried on satisfactorily, though there was a rigor on the day following the operation. Six days after the operation the urethral catheter was expelled and it was not thought necessary to reintroduce it. There may have been blocking by discharge but there was trouble in fixing the catheter to the long lax prepuce. On Oct. 11th the patient had passed urine several times per urethram without any leakage: the suprapubic drain was withdrawn. On the 18th micturition was free and painless. Bougies up to No. 11–14 could be passed with something of a hitch. The wound in the perineum was practically healed. On the 30th he was dismissed. On Dec. 8th he was at work. There was no discomfort and he could pass urine as freely as ever. On Feb. 13th, 1902, he was quite well. Bougie No. 13–16 was passed.

CASE 7.—The patient, a man, aged 47 years, was admitted to Ward 22 on Sept. 6th, 1902, with injuries due to a plate weighing about three tons falling on him while in a kneeling position. On examination there were found areas of bruising and abrasion all over the body but specially on the back, perineum, and lower limbs. The face was purple and there was ecchymosis of the eyelids and conjunctivæ on both sides. The movements of the legs were painful, the sensation in them being intact. He complained of tenderness in the lower part of the abdomen on both sides and in the middle and there was tenderness in these regions. With a soft rubber catheter ten ounces of urine were drawn off. The first that came contained shreds of clot; the remainder was clear. The pulse on admission was 66. The pupils were equal and active. I examined the patient and was of opinion that there was no fracture of the pelvis. On Sept. 8th the soft catheter had only withdrawn small quantities of bloody urine and the bladder was now distended half-way to the umbilicus. The patient was therefore put under chloroform and the bladder was punctured and drained suprapubically. The urethra was then cut down upon in the perineum; it was found to be completely divided "in front of the prostate." A soft rubber catheter was passed and fixed to the penis in the manner already described. It was found that the pubis was fractured (without displacement) to the right of the symphysis. On the 14th Dr. Knox incised a swelling in the upper third of the right thigh; it contained blood and pus. The urethral catheter was changed several times but drainage by this route was kept up till Nov. 1st (say seven weeks); the suprapubic one was removed at the end of about a fortnight. The patient was sent home on Nov. 19th. On Dec. 19th, one month after leaving hospital, it was noted that the patient passed urine in a good stream. Bougie No. 10–13 slipped in with a slight hitch. On Jan. 28th, 1904, the patient said that he retained his urine as before the accident and was able to rest all night and had resumed his usual work. Bougie No. 10–13 was passed as at the previous note a year ago.

Glasgow.

A CASE OF PSEUDO-LEUKÆMIA (LYMPHO-SARCOMA) IN A YOUNG CHILD.

BY JOHN J. REDFERN, M.D., M.A.O. R.U.I.,
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(*With Note by* WILLIAM HUNTER, M.D. Edin., F.R.C.P. Lond.)

THE following case is of interest on account both of its acuteness and the early age at which it occurred. A note made on Sept. 3rd, 1903, showed that the patient was then a healthy, plump, well-developed little girl, two years and

nine months old, with no history of previous illness. She had several swollen glands in the left side of the neck and some less swollen ones on the right side. These glands were firm, discrete, and somewhat elastic, not painful or tender on pressure. No other glands were swollen. Respiration was normal. On Sept. 18th it was noted that the patient had returned from Bognor, having developed slight dyspnœa. The glands in the neck had become larger. The glands in both axillæ were swollen. On Sept. 30th the swollen glands were larger and more numerous and the dyspnœa was increasing daily. The appetite was good and the general health was fairly stationary, but the limbs were weaker and wasting. On Oct. 6th the dyspnœa was steadily increasing and the glands were pressing more on the trachea. On Oct. 19th it was noted that the anterior mediastinal glands were larger, as shown by percussion, and extended to the right of the sternum. There was definite dulness, with absence of breath-sounds, as far as the third rib on the left side, extending over the two upper intercostal spaces. On Oct. 21st the patient was seen by Dr. William Hunter as her condition was becoming steadily worse. On Oct. 25th it was noted that the right lung moved slightly on respiration, which on both sides was becoming progressively more shallow and frequent, and dyspnœa was very marked, especially on exertion. In one dyspnœic attack cyanosis was marked, the heart's action being very rapid and feeble. The respirations were about 40 per minute. On Oct. 29th the glands were very much more swollen, especially those on the left side of the neck. The inguinal glands were slightly swollen. There was unilateral perspiration on the left side of the body, face, and limbs. The left pupil was more dilated than the right one. On Nov. 3rd the action of the heart was very rapid and feeble and the dyspnœa was urgent on exertion. The case terminated fatally that day by syncope after about eight weeks' illness. No necropsy was permitted. The disease had of late been progressing rapidly, although the child's general nutrition had remained good. The usual pallor and subcutaneous œdema were not very marked throughout and the general nutrition of the body was maintained until death. The spleen and liver were not markedly enlarged on percussion. There was no pain or cough. Pyrexia was intermittent and under 101° F. Arsenic was administered throughout and at first iodide of iron and cod-liver oil. There was no family history of syphilis or tubercle.

Note by Dr. HUNTER.—The case is the youngest and most acute that has come under my notice. When seen by me on Oct. 21st the blood condition was the following: red corpuscles, 4,080,000, and leucocytes 8000 per cubic millimetre; lymphocytes, 20 per cent.; hyaline leucocytes, 10 per cent.; polymorphonuclear cells, 63 per cent.; and eosinophile cells, 2 per cent. The cases of pseudo-leukæmia recorded as running an acute course have all occurred in children under 15 years of age and in duration varied from 11 days to four and a half months. The present case was fatal in two months. The blood condition was that generally present in these cases—namely, remarkably slight anæmia. In the majority of cases the leucocytes are normal or diminished in number and there is a tendency towards relative lymphocytosis. In some cases the leucocytes are increased but not to any great extent—e.g., to 50,000 or 60,000 per cubic millimetre.

TENDER SPOTS ON THE SPINE IN RELATION TO PAIN IN VARIOUS PARTS OF THE BODY.[1]

BY ST. CLAIR B. SHADWELL, M.D. ST. AND., L.R.C.P. LOND.

IT is with considerable diffidence that I read a paper before you to-day at this the first scientific meeting of our newly formed division of the British Medical Association, for I cannot help feeling that here, in the presence of men of scientific education and training, I am but one of the least of you and that I can but "tell you that which you yourselves do know." Indeed, it is as a learner and not as a teacher that I have ventured to bring notes of some cases which have come under my notice and to ask the expression of your opinion as to their real nature.

Some nine or ten years ago I was asked to see a girl, aged 16 years, who complained of pain in the epigastric region. She was well nourished and appeared quite healthy. There was apparently nothing abdominal to account for the pain. On examining the spine one of the dorsal vertebræ was slightly prominent and tender on pressure. Regarding this as a case of incipient spinal disease, complete rest was enjoined and the patient was kept in bed for several weeks. She made a good recovery and had no further trouble.

A child, aged six years, complained of severe pain in the abdomen. She was taken to a well-known consultant who makes diseases of children a speciality. He pronounced the case to be one of indigestion and prescribed accordingly. At the end of two months or so the child, having been regularly under observation, was worse rather than better. I was then asked to see her. On making an examination of the spine well-marked evidence of caries was found which sufficiently accounted for the abdominal pain.

Constant acute pain in the calf of the left leg in a man, where nothing local could be detected to account for it, was ultimately found to be due to sarcoma of the spine.

These are not the cases I wish to discuss to-day, but they have been introduced with the sole object of emphasising the fact that pain is often felt at a distance from the actual seat of the disease. Frequently patients come complaining of pain in various regions of the body; cure them of the pain, they are cured of the disease. What are those pains? Too often we are satisfied by giving them a name and treating them accordingly—pleurodynia, dry pleurisy, intercostal neuralgia, false angina, gastrodynia, ovarian neuralgia, neuralgia of kidney, occipital neuralgia, and even acute indigestion and rheumatism. These cases are usually treated generally and locally—tonics, quinine, strychnine, arsenic, salicylates, iodide and bromide of potassium being administered; locally by the application of anodyne liniments, blisters, continuous current, &c. Tedious enough is the treatment and long-suffering the patients. Many of these cases go on for weeks and even months, then change of air or residence in a dry climate is advocated.

In a very large number of these cases I have examined the spine and have found well-marked tender spots at the point of origin of the spinal nerves supplying the region of the body in which pain is complained of, and by treating the tender spots on the spine complete, immediate, and permanent relief has been the result. Time limit prevents me speaking so fully as I might, therefore all that I propose doing to-day is to give you a few brief notes of cases and to leave the subject for you to discuss.

CASE 1.—The patient, a woman, aged 26 years, on October 21st, 1900, complained of severe pain on the left side of her chest which increased on taking a deep breath and shallow breathing was resorted to in order to keep the chest quiet. At night the pain was so severe as to prevent sleeping. She was seen by a medical man who treated her vigorously. Poultices, liniments, and blisters were applied to the chest, but these gave little or no relief. Continuous current gave no better result. I saw her on Nov. 4th. Careful examination showed that there was no pleurisy or lung trouble. The skin of the side was tender to touch. On examination of the spine a very tender spot was found over the seventh dorsal vertebra, causing the patient to flinch when it was pressed on. Up to this time she was quite unconscious of any pain in the spine. I ordered the painful spot, which I marked, to be painted night and morning with linimentum iodi. On the 5th the pain was about the same, on the 6th it was markedly less, and on the 7th it was quite gone. There has been no return of pain.

CASE 2.—The patient, a woman, aged 45 years, was seen in November, 1900. She had severe pain in both shoulders and for a fortnight had been under treatment for rheumatism, but there had been no improvement. I found her sitting in a chair with the body bent forward, the arms in front, and the shoulders contracted. On examining the spine I found a very tender spot over the lower cervical vertebræ. This was painted night and morning with linimentum iodi. On the next day the pains in the shoulders were not so severe. She was obliged to sit still as the least movement increased the pains. On the second day she walked into the room perfectly upright, while on the third day the pains had quite gone and she expressed herself as being quite well. She was seen two years

[1] A paper read at a meeting of the Walthamstow Division of the Metropolitan Counties Branch of the British Medical Association at Leyton Town Hall on Oct. 27th, 1903.

afterwards but she had had no return of the so-called rheumatism.

CASE 3.—The patient, a woman, aged 37 years, was seen on March 10th, 1903. She had been suffering from hæmorrhoids, had lost a good deal of blood at times, and was somewhat anæmic. She had also recently had a slight attack of influenza. She complained of headache and pain over the region of the heart. There were systolic bruits at the base and apex. There were no signs of pleurisy or pericarditis. On the 14th the pain over the heart was of a spasmodic nature and was worse at nights. A belladonna plaster was applied on the cardiac region and nitro-glycerine was ordered to be taken when the pain was severe. On the 16th the nitro-glycerine had relieved the pain somewhat but it was still severe at times. Early on the morning of the 17th the patient had a very severe paroxysm of pain and was obliged to sit up in bed gasping for breath; the hands and the feet were cold and she thought that she was dying. On examining the chest I found the sixth intercostal nerve to be very painful on pressure and also found a tender spot on the spine corresponding to the origin of this nerve. Having marked the spot I ordered a blister to be applied. On the 18th the blister had taken well. The pain over the heart was much less. On the 19th there was no pain over the heart. The intercostal nerve was still tender, but from this time there was no return of paroxysmal pain. I continued to treat the patient for anæmia for two months.

CASE 4.—On April 20th, 1903, I was asked to see a woman who was suffering great pain. She was being attended for "acute indigestion." On the 21st she was still in great pain. By the kind permission of her medical attendant I was allowed to see her. For several days she had been confined to bed on account of severe pain over the region of the stomach which was so severe that little or no food had been taken for the last two days. The pain was of a spasmodic character. This fact led me to examine the spine, where a very tender spot was found in the dorsal vertebra, corresponding to the nerve supplying the painful area. A blister was applied to the spot on the spine. On the next day she was so much better that she was able to sit up in bed and have a chop for dinner without the least discomfort. When seen five months after she had had no return of pain nor had she since suffered from indigestion and was much improved in health.

CASE 5.—The patient, a woman, aged 46 years, came to see me with severe pain extending up the back of her head. She held her head with both hands and rocked from side to side as she sat in the chair. There was a very tender spot at the upper part of the cervical vertebræ. A blister was applied. On the next day the pain was much relieved and on the third day it was quite gone. She has kept well since.

Two cases of ovarian neuralgia with tender spots on the spine were treated in the same way with the same satisfactory result. In some cases the tender spots are multiple and in these pain is complained of in more than one region.

CASE 6.—The patient, a woman, aged 58 years, was seen on Oct. 5th, 1902. A week previous to that date she went to London on business and while going up some stairs was seized by a severe pain at the lower part of the sternum and could not get her breath. She was taken into a room where she remained some hours before she sufficiently recovered to be able to return home. She continued to have pains, but these were less severe in character. On the evening of the 4th she had another severe paroxysm of pain. When seen the pain was still severe on the left side of the chest extending to the lower part of the sternum and she also complained of acute pain over the region of the left kidney. Acutely tender spots were found on passing the finger over the dorsal and lumbar spines. These were painted with linimentum iodi. On the 6th the pains were better and on the 8th they were quite gone. There had been no return of pain when she was last seen on Oct. 22nd.

I am indebted to my partner, Dr. F. Percy Elliott, for brief notes of 13 cases from which I select the following.

CASE 7.—The patient, a woman, aged 39 years, was seen on Feb. 23rd, 1902. She had had pain and great tenderness over the ribs of the right side and at the epigastric notch for two months or more. The pain varied but was never absent. There was also pain down both arms. She had been unable to sleep for several nights on account of it. The pain in the side increased by the act of breathing. There was pain on pressure over four vertebræ. Two blisters were applied. On the 24th the pain in the arms was better but that in the side was no better. The lower blister was found to have slipped and this was reapplied. On the 28th there had been no pain in the side for the last two days and the arms were quite free from it. On March 7th she was quite well and free from pain.

CASE 8.—The patient, a man, aged 28 years, had been under treatment for two months for "dry pleurisy" and was getting worse. When seen on Nov. 20th, 1902, there was great pain on the left side of the chest which was most marked just below the left nipple. Tenderness of the intercostal nerve extending to the spine was found as well as a tender spot on the spine. There were no signs of pleurisy. He had not been able to do any work on account of the severity of the pain. A blister was applied to the tender spot on the spine. On the 21st the pain and tenderness were nearly gone and on the 23rd he was quite well and returned to work. The patient was greatly pleased with the result of the treatment.

CASE 9.—The patient, a woman, aged 22 years, had had great pain on the right side for three months and had been under medical treatment for two months without receiving any permanent relief. When seen on Feb. 25th, 1903, a tender spot on the spine was found which was painted with linimentum iodi. On the 28th the pain was nearly gone and on March 3rd she was free from it. On March 30th she was keeping quite well and had had no return of pain.

CASE 10.—The patient, a woman, aged 62 years, who had been attended for dyspepsia for four or five days, complained of pain of three weeks' duration over the spleen. The spleen was not enlarged but there was tenderness on pressure. There was a tender spot on the spine which was painted with equal parts of tinctura linimentum iodi night and morning. After three days the pain was better and it was quite gone in a week. There was no return.

Had time permitted it would have been interesting to have compared the above cases with some cases of herpes zoster recently under my care and to have pointed out the similarities and the differences in the two classes of cases. In zona I have failed, as also in some cases of intercostal neuritis, to find corresponding tender spots on the spine. Blistering the spine has not proved to be of any use in shingles either in relieving the pain or in cutting short the disease.

One other point I wish to draw attention to—namely, that patients never complain of pain in the spine in the class of cases brought before your notice in this paper. They may even protest when an examination is suggested that they have nothing the matter with their spines, yet when the tender spot is found by pressing on the spine with the point of the finger they flinch or even call out with pain. With apologies for the imperfection of this somewhat hurried paper I leave the subject for your consideration, discussion, criticism, and elaboration.

Walthamstow.

A CASE OF RUPTURE OF THE UTERUS DURING LABOUR; LAPAROTOMY; RECOVERY OF MOTHER AND CHILD.

BY ELGAR DOWN, M.R.C.S. ENG., L.R.C.P. LOND.

ON June 1st, 1904, at 5 A.M., I was called to a married woman who had engaged me to attend at her confinement. Her obstetric history was curious and was as follows. She was 38 years of age and had been married 13 years. Her first pregnancy had terminated at the sixth month, the child being stillborn. The second ended at six and a half months, the child being again stillborn. The third pregnancy went to full term and the child, a boy, is still living and healthy and aged ten years. During this pregnancy she was under the care of Dr. C. J. Cooke of Plymouth who tells me that she was taking perchloride of iron throughout. During the fourth pregnancy she was untreated and this resulted, as in the earlier ones, in the premature birth of a stillborn child. The fifth pregnancy ended in the same way, but the sixth terminated in abortion at the end of two months. At the beginning of the seventh pregnancy she put herself under medical treatment and took iron throughout. I attended her in her confinement, which took place in August, 1900. The child

was living up to the day labour commenced, when she was suddenly seized with severe pain in the abdomen. The pain was continuous, intense, and sickening. The fœtal movements were not felt afterwards. I was sent for at once and found the uterus very tense, hard, and painful; the os was not dilated and the membranes were unruptured. It appeared to be a case of concealed accidental hæmorrhage, so I ruptured the membranes and applied a binder. Pains came on at once and the labour terminated naturally the same day. The child was stillborn. After the birth of the placenta a large amount of dark clot came away and the patient had all the symptoms of having suffered from severe hæmorrhage. She was very ill for some time, phlegmasia alba dolens occurring, and she was in bed altogether for about eight weeks. During this eighth pregnancy she had been taking a mixture of iron and chlorate of potash since the beginning of the fourth month and had expressed herself as feeling very well and the movements of the child had been strong and vigorous.

When I arrived at about 5.30 A.M. on June 1st I was told that the labour pains had commenced at about one o'clock in the morning and had since then been strong, regular, and frequent. On examination I found the os fully dilated and the brow presenting at the brim. I gave chloroform and tried to convert the brow into a vertex and as this was not successful made an attempt to get the face to engage but did not succeed. As the parents were exceedingly anxious to have a living child I sent and got the assistance of my partner, Dr. C. L. Lander. He arrived very soon and under full anæsthesia I introduced my hand with the intention of turning but found that there was a well-marked retraction ring round the neck, so I did not persevere in the attempt. I then tried to pull the head down with forceps but was unsuccessful so I asked Dr. Lander to try. He first attempted to get the head into a more favourable position and then applied axis-traction forceps but his efforts were also of no avail. I thought it best to make no further attempt to save the child so I sent the husband to my house for a cephalotribe and perforator. Whilst he was gone there was some hæmorrhage from the vagina and on examining I found that the presenting part had receded and on further examination found an extensive laceration of the uterus through which the hand could be easily passed into the abdominal cavity. The patient was under the influence of chloroform so, of course, did not feel pain but there was a surprising absence of shock and the pulse was 80 and regular. We thought in the circumstances that laparotomy offered the best chance of dealing with the condition and the sooner we could carry it out the better. Accordingly, whilst Dr. Lander prepared the patient I got ready what few instruments my pocket-case contained and proceeded to operate. The nurse gave the chloroform and Dr. Lander assisted me. I made the ordinary incision in the middle line from the umbilicus almost to the pubes, at once exposed the rent in the uterus with the back of the child presenting, and delivered the child through the rupture. The placenta was also removed through the rupture. I then brought the uterus out of the abdominal cavity and thoroughly exposed the rent, which was situated on the lower and anterior surface running obliquely right across from left to right. I sutured the rent as carefully as possible, using a blanket stitch with thick catgut for the deep sutures, and brought the peritoneum carefully together with fine catgut. The uterus contracted well. There was no hæmorrhage from the placental site but some rather free bleeding from one corner of the uterine wound which however, was stopped by a deep suture. The uterus was returned to the abdominal cavity and the parietal wound was united by silkworm-gut sutures.

As in the case recorded by the late Dr. R. Milne Murray[1] no attempt was made to cleanse the peritoneal cavity. The whole operation was very quickly performed and the condition of the mother at the end was wonderfully good. The child, a boy, was living and apparently healthy. He weighed eight and a half pounds; his head was long and firmly ossified. There was some enlargement of the thyroid gland, so much so that the nurse called my attention to it again the next day, and I think this enlargement was, at any rate in part, a cause of the extreme difficulty in getting the head into a more favourable position. The after-history of the case does not call for much comment. The urine was drawn off by catheter on the first evening and afterwards was passed naturally. On the second and third days there was considerable abdominal distension and great difficulty in getting the bowels to act. Sickness also was very troublesome. The distension was relieved by turpentine enemata given with a long tube and the bowels acted freely after ten one-hourly grain doses of calomel. There was practically no temperature throughout, the highest recorded being under 100° F. The abdominal wound healed well and the stitches were removed on from the tenth to the fifteenth day. The patient was up at the end of three weeks and is now quite well. The baby also is thriving. The nursing was carried out by the usual monthly nurse as trained nurses were out of the question.

I have ventured to record this case in the hope that it may prove of interest. Of course rupture of the uterus is a calamity which is supposed not to occur in a well-regulated midwifery practice. In this particular case I do not know how it could have been avoided as both my partner and myself were extremely careful to use no more force than was absolutely necessary and no length of time was allowed to elapse after the recognition of the unfavourable position of the head. I think the history of the previous confinements affords an explanation of the extreme weakness of the uterine wall. With regard to the treatment adopted, there may be room for different opinions. I know the usual text-book advice is in a case of rupture of the uterus to deliver the child per vaginam either after turning or after perforating, but if the abdomen has to be opened to deal with the uterus later it seems much simpler to do it in the first place. Dr. H. Spencer[2] in an address delivered at the Obstetrical Society of London in 1900 strongly advocated gauze plugging and said that in his experience all patients treated otherwise had died. If laparotomy is performed the question arises whether to suture the wound or to remove the uterus. Wiener[3] says that the rule in his clinic is in all serious cases of rupture to perform laparotomy forthwith and with a clean tear to suture, and with lacerated wounds to perform supravaginal hysterectomy. Amann, Jun.,[4] summarises the operative methods of treatment in the following way. 1. Suture of the tear: (*a*) by the abdominal route; (*b*) by the extraperitoneal method; and (*c*) by the vaginal route. 2. Supravaginal amputation of the ruptured uterus: (*a*) with extraperitoneal treatment of the pedicle; and (*b*) with intraperitoneal treatment of the pedicle. 3. Total extirpation of the uterus: (*a*) by the abdominal route; and (*b*) by the vaginal route. So that there is apparently a fair range of choice. It is very difficult to get any clear or reliable statistics either as to the frequency of occurrence of rupture of the uterus or as to the success of any particular method of treatment. I think in the case forming the subject of this note the successful result was largely due to the rapidity with which the operation was carried out and to the small amount of disturbance of the patient afterwards.

Devonport.

[1] Milne Murray: British Journal of Obstetrics and Gynæcology, vol. i., part ii.

[2] THE LANCET, Jan. 13th, 1900, p. 100.

[3] Gustav Wiener: Beitrag zur Therapie der Uterus-rupturen, Münchener Medicinische Wochenschrift, January, 1902.

[4] Amann, Jun.: Die Abdominale Totalexstirpation bei Kompleter Uterus-ruptur, Münchener Medicinische Wochenschrift, March, 1902.

ON A CASE OF TUMOUR OF THE CENTRUM OVALE WITH CEREBELLAR SYMPTOMS.

WITH REMARKS ON THE DIFFICULTIES OF DIAGNOSIS.

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IT is incontestable that, even though we are armed with a host of criteria for determining the localisation of cerebral lesions, these, in the case of tumour, may often prove fallacious. Sir William Gowers,[1] commenting on this difficulty, states that although the general region in which the growth is placed may be determined in the majority of instances it is not often that its exact situation can be confidently affirmed. Professor Raymond[2] speaks with even more

[1] Diseases of the Nervous System, vol. i., p. 523.

[2] Clinique des Maladies du Système Nerveux, Année 1896-97, troisième série, p. 43.

caution: "En realite, il n'existe pas pour un tumeur intra-cranienne de siège déterminé, une symptomatologie fixe, invariable. Qui permette de toujours trancher à coup sûr la question de diagnostic topographique. C'est pourquoi le diagnostic du siège d'une tumeur intracranienne, qui, dans beaucoup de cas, peut se faire avec des chances de quasi-certitude, ne saurait d'élever d'autres fois au dessus d'un diagnostic de presomption." Now, when the effects referable to general intracranial pressure arise into prominence further to obscure the clinical picture, our uncertainty, in the face of these observations, is at once made doubly uncertain; indeed, the diagnosis from being a matter of difficulty now becomes well-nigh impossible. Therefore it is of the utmost importance that we should give the weight of our consideration in forming a diagnosis to the priority of the appearance of any one sign, however apparently insignificant. Further, unless we be on our guard, we may be apt to neglect the modifying effect which the chronicity of character of a tumour may have upon its power to irritate or to destroy surrounding structures; the every-day picture of what may occur, when hæmorrhage or softening destroys the pyramidal fibres, may blind us to the far less evident symptoms produced when they are gradually pressed aside.

These general remarks as well as other questions of diagnosis are so well illustrated by the following case as to make it, I think, worth putting on record. For permission to do so I am indebted to the kindness of Dr. W. Lee Dickinson, under whose care the case was admitted.

The patient, a single woman, aged 42 years, was admitted into St. George's Hospital on Oct. 14th complaining of inability to stand or walk, weakness of the legs (principally affecting the left), and loss of sight. Ten months before admission, towards the end of December, 1902, she had been laid up with an illness of the nature, as far as could be ascertained, of influenza. While recovering from this illness, in the beginning of January, 1903, she noticed that her right foot dragged when she walked and that she had difficulty in raising it from the ground. Early in February her eyesight began to fail and the failure increased to such an extent that by August, 1903, she was only able to distinguish between light and shadow. Thereafter her vision never improved materially, though on occasions, especially after the eyes had been subjected to a bright light, she had been able for a time dimly to discern the shape of objects. About the middle of February she began to suffer from headache. The headache was at first occipital but radiated over the vertex where it finally became localised. In character it was of a severity quite beyond anything she had ever experienced before. Soon after the headache first appeared she began to vomit frequently. The vomiting seemed to her to be more dependent upon the severity of her headache than upon the ingestion of food. Headache and vomiting persisted thenceforward until August, after which they gradually became less intense and disappeared. In the meantime her difficulty in walking increased and was complicated by ataxia, so that for some time before admission she had been unable to stand and was finally obliged to lie up altogether. With the exception of occasional attacks of confusion she had noticed no change in the state of her mind and her memory had not failed her noticeably. She had had occasional attacks of giddiness but no fit properly speaking involving loss of consciousness or otherwise. There was no fact in the patient's history pointing to syphilis and no evidence of tuberculosis either in herself or in any member of her family. On admission she was found to be a frail, delicate-looking woman, apparently of about the age she represented herself to be and of about the medium height. She was thin but in no way emaciated or cachectic. As to the nervous system, mentally, there was no abnormality except a certain slowness of reaction: the intellect was quite clear and the memory, so far as could be ascertained, was unaffected; on the side of emotion she was perhaps abnormally placid and apathetic, considering the gravity of her illness. The pupils were equal and reacted sluggishly to light. Accommodation could not be tested because of the state of the vision, this being confined to perception of light and shadow; there was no marked difference between the vision on either side. While there was no definite external ocular paresis affecting one muscle more than another there seemed to be a certain hesitancy in moving the eyes in any direction; no nystagmus was observed at the moment. The speech, without being definitely scanning, was slow and deliberate and of a nature very characteristic of that usually associated with cerebral tumour; there was neither aphasia nor dysarthria. Some loss of power was present in the right upper and lower extremity, particularly in the latter. No tremor was observed but occasionally there were purposeless movements of the right hand and arm of medium range. It was impossible for the patient to keep her right arm outstretched either laterally or in front of her; in the former case the arm tended to sway inwards towards the mid-line, in the later, after a short lapse of time, it wavered and gradually dropped on to the bed. There was no facial paralysis of any kind; the tongue was protruded without difficulty and in the mid-line. The tone of the muscles generally seemed normal; there was certainly no sign of increase; on the other hand there was no abnormal placidity. No atrophy of the muscles was present, either general or particularised. Sensation, objectively, was normal everywhere except in the region of the abdomen and thigh as far as the knee on the right side; here there was some diminution in the perception and particularly in the power of localisation of both tactile and painful stimuli. This slight alteration in the state of sensation was, besides, transient and had disappeared when the patient was examined on the following day. The state of the reflexes was variable and inconstant. When first examined it was thought that the right knee-jerk was increased. Shortly after it was found to be diminished and the character of both varied from day to day. No ankle-clonus, however, was obtained on any occasion and the Babinski phenomenon was never found to be present, though frequently tested for. The coördination of finer movements was somewhat impaired in the right hand. The disturbance of equilibrium and gait was very marked: the patient was hardly able to stand without support and when this was removed tended to fall backwards and to the right. This fact was noted on more than one occasion and by two different observers independently. On attempting to walk the gait was staggering and the patient swayed from side to side and would have fallen had she not been supported. There was no stamping as in tabes; the feet were, however, well raised from the ground and did not drag. The unsteadiness of the patient made Romberg's sign difficult to estimate, but she seemed to experience little or no further difficulty in maintaining her equilibrium when the eyes were closed. There was no sign of deafness. The olfactory sense was not tested. The sphincters were unaffected when she was first admitted. On the day after admission, when first examined, it was thought that there was localised tenderness in the upper part of the left parietal region and upon this fact and the slight paresis present in the right limbs a provisional diagnosis of tumour in the upper part of the Rolandic area on the left side was made. Unfortunately, as it will be seen, for the patient, when she was next examined this tenderness was no longer present. On the other hand, there seemed to be tenderness in the right mastoid region; this diagnosis, therefore, the correct one as it turned out, was relinquished in favour of the one detailed further on. The condition of the heart, lungs, and abdominal viscera was perfectly normal. The pulse presented nothing characteristic. For several days the condition of the patient remained practically unchanged. She suffered from some headache—not of a severe nature—in the frontal region and vomited once after taking food. Gradually, however, a change presented itself in the patient's mental condition; she began to have spells of lethargy and drowsiness. This state deepened into one of stupor and it became evident that if life were to be saved radical measures of treatment must be adopted without delay. It was therefore incumbent upon those in connexion with the case to diagnose the site of lesion.

Sir William Gowers[3] states that in the diagnosis of every case of cerebral tumour four points have to be decided: (1) Is organic disease present? (2) Is it a tumour? (3) If so, where is it situated? and (4) What is its nature? It will be easily understood that we had no difficulty as to the first two questions. As to the nature of the tumour there was no history pointing to tubercle or syphilis, and for the latter anti-specific remedies had been vigorously exhibited over a long period of time without causing any amelioration. Finally, where was the tumour situated? After considering the points of the case carefully it seemed to me probable that it was a tumour of the cerebellum and more probably a right-sided than a left-sided one. My reasons for making

[3] Diseases of the Nervous System, vol. ii., p. 519.

this diagnosis were based upon the following considerations which I shall summarise here in a tabular form.

Positive signs.	I.	The presence of marked ataxia of the cerebellar type (titubation) with tendency to fall backwards and to the right.
	II.	The presence of tenderness in the right occipital region.
	III.	The intensity and the early onset of the optic neuritis.
	IV.	The presence of static ataxia of the right upper extremity.
	V.	The presence of nystagmus when the eyes were directed to the right. (This symptom appeared in the course of the patient's stay in the hospital.)
Negative signs.	VI.	The incomplete nature of the paresis, which, although of a hemiplegic distribution, was unaccompanied by any spasticity or sign of contracture.
	VII.	The variable and inconstant character of the knee-jerks.
	VIII.	The absence in the history or during the time the patient was under observation in the hospital, of any convulsions—Jacksonian or other.

At a consultation between Dr. Lee Dickinson and Dr. F. G. Penrose I ventured to suggest this diagnosis upon the basis of the above conclusions, and Dr. Penrose after making an exhaustive examination of the case himself was disposed to favour it. In the course of his examination, among other signs, he besides confirmed the observation that there was definite and extreme tenderness to pressure in the right occipital region. In accordance with this diagnosis Mr. F. Jaffrey on the next day trephined in the right occipital region. It is unnecessary for me here to enter into the details of the operation—suffice it to say that, beyond evidence of much increased intracranial tension below the tentorium, nothing abnormal was discovered. The right lobe of the cerebellum, which at once presented on incising the dura mater, was in all respects perfectly healthy. The patient unfortunately died soon after the operation from the effects of shock.

The following is an abstract of the account of the necropsy: "A large trephine hole is present over the right lobe of the cerebellum from which blood-clot and brain matter exude. The posterior part of the left parietal bone is extensively eroded and has a worm-eaten appearance. In places the bone is very thin and in one place there is an actual perforation. Over the affected area the dura mater is slightly adherent to a tumour imbedded in the left hemisphere. Brain weighs 3 pounds 4 ounces. In the white substance beneath the upper part of the Rolandic area is a pinkish tumour, having an almost globular shape, measuring one and a half inches in its vertical and two inches by two and three-eighth inches in its horizontal diameters. The tumour, which cuts with a slight sense of resistance, does not infiltrate the brain tissue and could have been easily shelled out. It causes considerable bulging of the hemisphere in its median, lateral, and vertical aspects, and has given rise to compression of the lateral ventricle, the septum lucidum being markedly distorted to the right."

Microscopically the tumour proved to be a spindle-celled sarcoma. It did not extend so deeply in the centrum ovale as to reach the upper level of the basal ganglia. The importance of these findings can hardly be too strongly emphasised, for here was a condition comparatively rare in cerebral tumour which, had a correct diagnosis been made, could have been easily dealt with surgically, with a chance of prolonging the life of the patient, perhaps, for an indefinite period, even at the eleventh hour. Yet, without insisting too strongly, I am at a loss to know how we could, considering the aspects of the case, have diagnosed tumour of the centrum ovale. Let us examine in more detail the factors that influenced our diagnosis, taking them *seriatim*.

Staggering gait, "titubation" as it is called, undoubtedly forms a cardinal element in the cerebellar syndrome of most authorities. Indeed, it is one of the few definite manifestations which seem referable to disease of the cerebellum, *per se*, as opposed to the effect of such disease upon neighbouring structures. Ferrier,[4] after considering the symptoms of cerebellar disease in detail, thus sums up: "The pathognomonic indication of cerebellar disease is an uncertain reeling gait like that of alcoholic intoxication." On the other hand, Raymond[5] has pointed out that titubation may be a symptom when there is no lesion of the cerebellum. "La vérité est celle-ci; la titubation ne manque presque jamais des cas de lésion du cervelet; pas contre on l'a observée, mais à titre tout a fait exceptionnel dans les cas de lésions encephaliques, qui n'avaient aucun rapport direct avec le cervelet." The lecture in which these remarks occur deal with a case in some respects parallel to the one under consideration. The diagnosis lay between tumour of the centrum ovale on the right side, the right lobe of the cerebellum, and the anterior corpora quadrigemina. The patient, a girl, aged 20 years, had had symptoms for five and a half months before her admission into the Salpétrière, beginning with dragging of the left leg. When examined six weeks from the time of the onset of her illness she was suffering from headache and vomiting. Double optic atrophy was found, more pronounced on the right side. There was left hemiparesis with ataxia on the left and partial left hemi-anæsthesia. The right knee-jerk was increased and commencing ankle clonus was present on the right side. The gait was staggering. Subsequently the patient became demented, headache and vomiting disappearing. Contracture developed in the limbs of the left side, and owing to forced deviation of the head and neck to the right, the muscles of the neck on that side became contracted. Raymond was inclined to favour the cerebellum as the site of lesion, basing his diagnosis on the character of the gait, the forced deviation of the head and neck, and the increased deep reflexes on the opposite side to the paralysis. At the necropsy a cyst was found occupying that part of the centrum ovale underlying the upper one-third of the ascending frontal and the upper one-fifth of the ascending parietal convolutions on the right side, a situation almost identical with that occupied by the tumour in the present case only on the opposite side. In connexion with this case Raymond refers to four cases quoted by P. Bruns,[6] in which titubation was present where there was no lesion of the cerebellum. According to Bruns titubation may occur both in connexion with tumours of the anterior corpora quadrigemina and of the cerebellum, the distinction being that in the former ophthalmoplegia precedes the ataxy, whereas in the latter ataxy is the earlier symptom. In the present case there was no definite ophthalmoplegia, merely an asthenia of the ocular movements leading to nystagmus, such as is described by Duret[7] among the symptoms pathognomonic of cerebellar tumour.

Next, as to the optic neuritis. This symptom seems to be more common in cerebellar than in cerebral tumours. Bernhardt, quoted by Ferrier,[8] found it in 61 per cent. of his cerebral as against 36 per cent. of his cerebellar cases. On the same page Ferrier also remarks that optic neuritis occurs very early in cerebellar disease. This accords with what occurred in the present case, where it will be remembered dimness of vision was noticed a week or two only after the onset of the first symptoms. Again, he writes: "Some forms of cerebellar disease, especially tumours, lead very commonly to impairment of vision, more so perhaps than tumours situated elsewhere. This is probably due to the frequency and intensity of optic neuritis combined with hydrocephalus." Raymond gives two reasons why cerebellar tumour should especially give rise to optic neuritis: (1) œdema from pressure on the veins of Galen, and (2) indirectly by involvement of the anterior corpora quadrigemina.

Localised tenderness was found in the occipital region both by myself and Dr. Penrose. The value of this sign has been too often emphasised by Professor Ferrier to require further comment here. Unfortunately, it was misleading in the present case. Nor need I lay stress upon the presence of nystagmus to the right side. Nystagmus is universally recognised now as being associated with disease of the cerebellum, authorities apparently only differing as to whether it occurs when the eyes are directed towards or away from the side of lesion.

It will be remembered that the patient found it impossible to keep the right arm outstretched laterally or in front of her. This condition seems to me identical with that called by the French "*ataxie statique*" and described by Raymond as occurring in Friedreich's ataxia Luciani, as pointed out by Ferrier,[9] has shown that the instability occurring in cerebellar disease may not only affect the trunk as a whole but

[4] Allbutt's System of Medicine, vol. vii., Cerebral Localisation, p. 385.
[5] Clinique des Maladies du Système Nerveux, 1896-97, troisième série, p. 90.
[6] Ueber Storungen des Gleich-geirichts bei Stirn-hirn-Tumoren, Deutsche Medicinische Wochenschrift, 1892, No. 7.
[7] Revue Neurologique, 1903, p. 945, quoted in Medical Chronicle, January, 1904.
[8] Allbutt's System of Medicine, vol. vii., Regional Diagnosis of Cerebral Disease, p. 378.
[9] Allbutt's System of Medicine, vol. vii., p. 373.

a single limb alone. The cerebellum (Hughlings Jackson) regulates the contractions necessary for our attitudes in space as opposed to the cerebrum which regulates the contractions necessary to effect all change of attitude which are made in response to successive impressions occurring in time." The more recent researches of Babinski[10] seem to be contradictory to this hypothesis, for he finds the static equilibrium to be increased in cases of cerebellar lesion, giving rise to a quasi-cataleptic condition.

Further, in the present case, in contrast to that of Raymond cited above, the paresis, although of a hemiplegic distribution, was variable and incomplete and unassociated with any definite spasm. This seems, on the whole, fairly well to accord with the summary given by Ferrier of the state of things which may occur in cases of cerebellar lesion. It would seem, however, that if, as he states, the paralysis of the limbs so caused is due, not to the cerebellar lesion itself, but to its pressure upon the pons, it should occur on the opposite side to the lesion since the interference to the pyramidal tract would occur above the decussation. We should certainly have hesitated before excluding our alternative diagnosis—tumour of the upper part of the left Rolandic region—because of the incompleteness of the paralysis, for although Gowers[11] mentions tumours of the centrum ovale as giving rise to paralysis of an ordinary hemiplegic type "usually associated with convulsions," still he points out[12] that nerve fibres may long resist the pressure of a slowly growing tubercle or sarcoma. Undoubtedly, as shown by the necropsy, the uninfiltrating nature of the tumour accounted for the very slight signs present of involvement of the pyramidal system and also, perhaps, for the extraordinary fact that although the tumour had penetrated the cortex, had become adherent to the dura mater, had eroded and in one place had even penetrated the skull, no convulsions had occurred during life. The slight and variable nature of the reflexes, too, is quite in accordance with what Ferrier has to say concerning them in cases of cerebellar affection: "the state of the knee-jerk may also vary at different times in the same case."

Finally, the objective sensory disturbance was slight and inconstant. It is generally affirmed that abnormalities of sensation are rarely caused by disease of the cerebellum. Partial hemi-anæsthesia has been observed, according to Ferrier, on one side or the other; it has never been determined in cases of atrophy and may therefore be presumed to be the result of pressure on neighbouring parts. On the other hand, inconstancy of sensory disturbance is no argument against a lesion of the Rolandic area and of the underlying white matter, for both Ferrier[13] and Gowers[14] confirm the opinion expressed by Charcot and Pitres[15] that the anæsthesia associated with lesions of the motor area is, if not a hysterical manifestation, at least dynamic in nature and closely allied to one and that therefore its extent is no way dependent upon the severity of the lesion.

We have now considered in some detail the various points which led to the diagnosis of tumour of the cerebellum, taking them separately. It has, however, been stated by Gowers[16] as a point of importance that the diagnosis (of cerebral tumour) must depend on the grouping of symptoms rather than the presence of any one symptom. Let us see whether, bearing this axiom in mind, the diagnosis which we made still appears to be justifiable. Raymond thus enumerates the factors of the "syndrome cerebelleux": occipital headache, vomiting without effort, vertigo, cerebellar ataxia, muscular weakness, exaggeration of the tendon reflexes, amblyopia with œdema of the optic discs, and nystagmus. Few of these symptoms at some time or other in the course of our case were absent. To them, according to the more recent classification of Duret,[17] may be added rigidity of the neck and sometimes opisthotonos, asthenia, ataxia, and asynergia, attacks of loss of consciousness without convulsion, asthenia of the ocular muscles culminating in nystagmus (also observed in our case), and increased reflex on the affected side.

Why, then, in the face of this evidence should a clinical picture, the factors of which taken individually and collectively seemed with tolerable certainty to point to a right-sided tumour of the cerebellum, be associated with one situated almost at the opposite pole of the brain? The reason, I think, is not far to seek. By the time the case came under our observation the effects of general intracranial pressure had entirely overshadowed those produced by the local effects of the lesion. Why these should have taken on the guise of the cerebellar syndrome it is not, at first sight, quite so easy to explain, but the reason probably lies in the fact that many of the factors which combine to produce that syndrome are in reality due to the frequency with which tumours of the cerebellum give rise to increased intra-ventricular pressure: that this increased pressure was also brought to bear on the ventricles in our case the necropsy sufficiently shows. It must be ascribed to the nature of the growth whereby it merely pressed upon the surrounding cortex and corona radiata, instead of infiltrating them, that these effects of increased intra-ventricular pressure formed the predominating features of the clinical picture.

The case, I think, clearly illustrates several important facts: first, as touching the criteria upon which we may depend for diagnosis, it may be added to the list of cases already in existence which show that a staggering gait need not necessarily be associated with a lesion of the cerebellum. It further points out in this connexion that if a growth be sufficiently circumscribed it may be for many months situated beneath the cortical motor area and may finally penetrate the cortex and overlying dura mater without necessarily giving rise to convulsions or to any marked paralysis during life. Finally, it emphasises the point that signs occurring late in the course of a case of cerebral tumour, however clearly they may seem to point to a definite localisation, since they may evidently be merely the results of increased general pressure upon structures far removed from the site of the lesion, can weigh but little in the scale of our diagnosis. Whereas, those that occur early should claim our consideration according to their priority.

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[10] Revue Neurologique, 1902, p. 470, abstracted in Medical Chronicle, January, 1904.
[11] Diseases of the Nervous System, vol. ii., p. 503.
[12] Ibid., p. 502.
[13] Allbutt's System of Medicine, vol. vii., p. 298.
[14] Diseases of the Nervous System, vol. ii., p. 507.
[15] Clinique de Bordeaux, September, 1894.
[16] Diseases of the Nervous System, vol. ii., p. 523.
[17] Revue Neurologique, 1903, p. 945, quoted in the Medical Chronicle, January, 1904.

THE TREATMENT OF RECTAL PROLAPSE BY THE SUBMUCOUS INJECTION OF PARAFFIN.

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THE principle of introducing paraffin into the tissues for the relief of certain diseases and deformities was originally advocated by Gersuny of Vienna in 1899 as the result of some experiments upon animals in which he found that hard vaseline melted and injected under the skin remained unchanged as a rounded swelling. His first case was that of a young man who had undergone bilateral castration for tuberculous disease of the testicles and who was thereby debarred from following out his ambition to become an officer in the army. By injecting paraffin into both sides of the scrotum Gersuny simulated the normal appearance of the testicles sufficiently successfully to enable his patient to pass the necessary medical examination and he was admitted into the service. Three years later the lumps of paraffin were hard and apparently unchanged, despite his having passed through an attack of typhoid fever, during which the temperature rose to 104° F.—the melting point of the paraffin used. Encouraged by this success Gersuny applied his method to the narrowing of a cleft palate and to the correction of deformed noses and later still he made many other suggestions for its use, including those for the cure of incontinence of fæces and of rectal prolapse. In this country Stephen Paget, Walker Downie, Scanes Spicer, and others have worked at the subject, chiefly with regard to the cure of nasal deformities, but in a communication to THE LANCET[1] Paget mentions three cases of prolapse which he had successfully treated.

During the last 15 months I have utilised the submucous

[1] THE LANCET, May 16th, 1903, p. 1354.

injection of paraffin in 18 cases of prolapsus recti and one of prolapsus recti associated with severe incontinence. The paraffin I use has a melting point of 111° and can be obtained sterilised in small bottles. It is kept melted by placing the bottle in a bath of water at a temperature of about 120° F. The syringe has its barrel covered with rubber to retain the heat longer but I use no special means to keep the needle hot. The syringe also is placed in the hot water bath for a few minutes, is then filled with the melted paraffin, and replaced in the bath until the moment it is required to be used. The syringe and paraffin can be obtained from Mr. Frank Rogers of 327, Oxford-street, London, W.

The following is the technique of the operation which I now perform. The patient is anæsthetised and placed in the lithotomy position and the prolapse is drawn outwards to the fullest possible extent. I next seize the apex of the prolapse with artery forceps at three points equidistant along its circumference, so selected that two forceps will be placed anteriorly and the third in the posterior median line. By gentle traction on these forceps the assistant then raises the mucous membrane into three ridges, forming an equilateral triangle. The needle of the syringe is inserted in turn into the middle of each side of this triangle, from two to three cubic centimetres of paraffin being introduced on each occasion. As this solidifies it will be found that the mucous membrane has become bulged inwards, encroaching on the lumen of the bowel and converting it into a more or less tri-radiate slit. The forceps are removed, the apex of the prolapse is reduced, and the mucous membrane is again seized with forceps about one and a half inches from the original apex, the forceps being again placed equidistantly, but this time two are placed posteriorly and the third in the anterior median line. The mucous membrane is again raised into ridges by gentle traction on the forceps and the needle is inserted midway along each ridge as before, with the result that the lumen of the bowel is again converted into a tri-radiate slit, the radii, however, corresponding to the intervals between the radii of the tier above. This portion of the prolapse is now reduced and the forceps are reapplied, this time two being anterior and one posterior, and the process is repeated until the anus is reached. As a rule three tiers are sufficient but in a very long prolapse more may safely be introduced. In order that any straining on the part of the patient may not cause the prolapse to re-descend before the paraffin has firmly set I insert a stout silkworm-gut suture through the buttocks on either side and tie it firmly over a pad of gauze placed over the anal orifice. This suture is removed at the end of 24 hours. No special after-treatment is required. The patient is kept in bed for four or five days. The bowels have usually been allowed to act spontaneously.

Results.—Of the 18 cases the ages ranged from three to 48 years and the size of the prolapse from one and a half to five inches in length. In all of them previously to the operation the prolapse descended with almost every action of the bowels and remained down until replaced. Two were associated with excoriation and ulceration of the mucous membrane. Two had been previously treated by the method of linear cauterisation without success and two had recurred even after the excision of the lower part of the rectum. The result of the operation has been extremely satisfactory in all the cases, not a single instance of re-descent of the prolapse having occurred. One patient left the hospital at the end of a fortnight but the remainder have all been under observation for at least two months and several for a much longer period. I have examined the rectum digitally at periods of from one day to six months after the operation and the paraffin masses can readily be distinguished, feeling like nodules of cartilage or dense fibrous tissue. They do not appear to alter this character within the period specified, at any rate to any appreciable extent.

The action of the paraffin must, in the first instance, be a purely mechanical one since the good results follow immediately upon its setting and cannot therefore depend upon any vital phenomena. During the descent of a rectal prolapse it may be observed that the process is a progressive eversion of the rectal mucosa, beginning at the muco-cutaneous junction and extending upwards. For this to occur there must be a certain degree of flexibility of the rectal wall, which is, of course, materially impaired when it is infiltrated with paraffin. Moreover, the presence of the latter very considerably narrows the space through which the prolapse has previously descended, and in fact if the technique is carried out according to the method I have described the lumen of the bowel is converted into two or more tri-radiate slits so super-imposed that the radii do not correspond. This valvular arrangement offers, I believe, a very efficient obstacle to the re-descent of the prolapse.

Several accidents have been reported by various workers during the introduction of paraffin into the tissues but in my own cases I have not seen the slightest ill-effect of any kind. Two possible dangers that suggest themselves are those of sepsis and of pulmonary embolism. With regard to sepsis, though every care has been taken in the sterilisation of one's armamentarium, yet it must be recognised that the field of operation cannot possibly be rendered sterile, and in some of the cases, in the younger children, the bowels have actually been moved during the performance of the operation without in any way complicating the after result. The danger of pulmonary embolism from penetration of a vein by the point of the needle is undoubtedly a real one, and several accidents of this kind have been placed on record. Theoretically the best method of avoiding such a contingency would be to insert the needle first and to see if blood flows from it before commencing to inject the paraffin. Practically, however, this is impossible, as, owing to the cooling of the needle, solidification of the paraffin takes place within its lumen. The precautions that I take against this accident are (1) to blunt the point of the needle; (2) to see that its point can be moved freely in the submucous tissue before pressing home the piston; and (3) by seizing the mucous membrane with forceps, as I have described, and raising a fold of it by gentle traction; the large veins which lie in the outer part of the submucous coat are not drawn into the fold and are therefore less likely to be punctured.

The chief methods at present employed in the operative treatment of prolapse are: (1) linear cauterisation; (2) excision of the elliptical folds of the mucous membrane; (3) excision of the prolapse; and (4) colopexy, either sacral or abdominal. In comparison with these the method that I advocate has several distinct advantages: (1) It is a simpler procedure, excepting, perhaps, linear cauterisation, and can be more rapidly performed; (2) it entails practically no risk to life; (3) no prolonged after treatment is required, merely keeping the patient in bed for a few days; (4) the benefit obtained is apparent immediately the paraffin has set and does not depend upon any subsequent vital phenomena, nor does it make any demand upon the reparative powers of the patient; (5) it offers a much greater probability of a permanent cure; and (6) even, however, should it fail the patient's condition is no worse than before and the procedure may be repeated subsequently.

The prolapse met with sometimes in connexion with artificial anus could be treated upon similar lines. I have not had any experience of such a case but I see no *a priori* reason why it should not succeed. In performing a colotomy intended to be permanent an all-important feature of a modern operation is entirely to prevent the passage of fæcal matter from the upper into the lower segment by insuring the formation of a good "spur." Should, however, this "spur" become inefficient, either from primary insufficiency or from secondary contraction, we have in the submucous injection of paraffin a means of raising the deficient spur to any height that may be desired. Moreover, by the same procedure we may, if we prefer, so narrow the lumen of the rectal segment that the passage of fæces into it would be impossible.

Distribution of the paraffin in the tissues after injection.—If paraffin be injected into a limb of the cadaver (of course artificially warmed) it solidifies *en masse* around the point of injection and can be afterwards cut down upon and removed as a well-isolated block. It is very different when the injection is made into the living subject. Here the paraffin actually diffuses itself along and thoroughly infiltrates the connective tissue framework of the part into which it is injected so that after solidification we have not a single isolated nodule but numerous small masses, not larger than a pea, surrounded by fibrous tissue and inseparably connected with the tissues around. Any attempt to remove such a nodule can only succeed when, along with the paraffin the whole of the infiltrated tissue is incised.

Fate of the paraffin.—It is probable, according to Paget, that the very hard paraffins, those melting at about 136°, become encapsuled by fibrous tissue and remain thereafter unchanged just as would a foreign body. Whether the softer paraffins remain unchanged or are absorbed and

replaced by fibrous tissue has been the subject of much discussion and experiment and the question cannot yet be said to be settled definitely. One of the latest workers in the field is Morton[2] of San Francisco who, experimenting with a paraffin melting at 109°, found that at the end of four months the spaces where the paraffin had been deposited were completely occupied by embryonic tissue. I have recently had the opportunity of making a post-mortem examination in the case of a boy upon whom I had operated by the method already described and who died four and a half months later from a cerebral condition. The masses of paraffin did not appear to have undergone any material change; they were firmly encapsuled by fibrous tissue, which had also infiltrated their peripheral portions for a slight distance, but for the main part they consisted of unaltered paraffin. The rectum was firmly fixed in its normal situation and could not be drawn down to constitute a prolapse even after the exercise of considerable traction. Some peritoneal adhesions had taken place, fixing the posterior rectal wall to the hollow of the sacrum. The paraffin had remained strictly localised to the area of its introduction.

Manchester.

CASES OF APPENDICITIS WITH PERFORATING DUODENAL AND GASTRIC ULCER.

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THE following case has seemed worthy of record because of the unusual conjunction of two abdominal conditions which more than possibly were connected one with another.

The patient, a man, was first seen in February, 1903. He then complained of pain in the right lower half of the abdomen and pain in the back of a dragging character. His age was 56 years and he occupied a responsible position. His previous history was uneventful; he was moderate in regard to alcoholic liquors but was a hearty eater. He was of stout build, weighing 15 stones. A small umbilical hernia was present which contained omentum but nothing could be felt through the abdominal wall owing to its thickness. Under treatment and a suitable *régime* the pain in the right iliac region subsided, although the dragging pain in the back continued. This latter was attributed to the traction from the adherent omentum in the umbilical hernia. In January, 1904, he again suffered with severe pain in the region of the appendix and although this again became quiescent under treatment, a third attack in April, 1904, practically confirmed the diagnosis of appendicitis, and it was decided to operate as soon as the attack had passed.

On May 8th, after suitable preparation, chloroform was administered and an incision was made over the appendix. The abdominal parietes were very thick, owing to two inches of subcutaneous fat. On opening the peritoneal cavity the omentum was found to be adherent to the umbilical ring. This was freed without much difficulty. The appendix was found lying behind the cæcum and was sharply "kinked." It presented no signs of acute inflammation but was broader in diameter than normal and its surface showed old lymphoid deposit. It was removed, and after careful treatment and ligation of the stump, the great omentum was pulled down over the intestines and the abdominal incision was closed. The patient, who took the anæsthetic well, quickly recovered consciousness and passed a quiet day without any nausea or sickness. On May 9th the morning temperature was 99·6° F. and the pulse was 76. No discomfort was present. The nurse noted some slight jaundice of the skin and conjunctiva. The evening temperature was 98°. The succeeding three days were uneventful except that the evening temperature on the 10th and 12th was 99·4° and 99·6° respectively and that on the 10th the nurse noticed that the tongue was blackened. This was considered to be due to the barley-water and lemon that the patient was sipping and disappeared when this was discontinued. On the 13th the morning temperature was 97·4° and in the evening compound liquorice powder was given to open the bowels. Two tarry-looking stools were passed and were found to contain blood. On the 14th the wound was dressed and was found to be broken down, foul-smelling pus and globules of fat running freely from it. The wound was dressed night and morning and pus continued to come away together with a large amount of oily-looking fat droplets. The deeper layers of the wound were closely united and it was obvious that the vitality of the subcutaneous fat had been low and that necrosis of this tissue had taken place. The wound healed in about a fortnight's time.

On May 16th, eight days after operation, the stools again contained much tarry-looking blood and on the 18th the blood was still more copious in amount. Up to this time the patient looked and felt fairly well, his temperature was fairly regular, and his pulse never above 80. On the 19th his pulse became a little intermittent and the fact of his having lost a large quantity of blood now began to be obvious in the pallor of his skin and the pearliness of his mucous membranes. Opium was exhibited for eight days, during which time his bowels were confined. The source of the hemorrhage was much debated; it was obvious from the extreme alteration of the blood that its source was high up in the intestinal tract and cirrhosis hepatis, gastric ulcer, and carcinoma were reviewed, but all were dismissed for want of evidence. Mr. B. G. A. Moynihan of Leeds suggested in writing to one of us (R. E. S.) that a small vessel on the inner side of the appendix was a possible source of hæmorrhage, both Murphy of Chicago and Mayo of Rochester (U.S.A.) having lost cases of appendectomy from this cause. It was, however, after consideration, decided that this could not be the source of such extensive hæmorrhage. On the 28th an enema brought away melænal stools. An enema on the 31st brought away lighter-coloured stools, and enemata on June 2nd, 4th, 6th, and 7th produced naturally coloured stools. About this date it was suggested that the hæmorrhage was due to a duodenal ulcer consequent on the breaking down of the skin incision, the process being akin to that following burns. Whatever the cause, a little hæmatemesis on the 14th was again followed by melænal stools on the 15th, 16th, and 17th, and the patient succumbed on the 20th from exhaustion, despite every variety of medicinal styptic treatment.

A post-mortem examination of the thorax and abdomen was permitted of which the following are the notes. The necropsy was made on June 20th. The temperature was 64° and it was a close thundery day. The body was that of a well-nourished well-developed man. His height was about five feet six inches. The body was of a universal pale yellow, waxy hue. Rigor mortis was general. There was a healed depressed scar in the right iliac region. On opening the abdomen the parietes were noted to be very fat; the muscle tissue was very pale; no blood was seen. The great omentum and several coils of small intestine presented. There was no peritonitis. The great omentum was adherent to the scar above mentioned and the inferior surface of the great omentum was slightly adherent to the cæcum. All the intestines presenting were small and contracted and of a dark grey, slatey colour. Nothing abnormal could be felt in the abdomen except that the head of the pancreas seemed of tougher consistence than normal. As regards the heart there was some increase in epicardial fat. The muscle wall was normal. In the right auricle a soft red clot of the size of a walnut was found. The other cavities were empty. The valves were healthy and competent. The lungs were emphysematous along the anterior border; otherwise they were normal. There was no basal œdema. The trachea and bronchi were normal. The œsophagus was normal; no varices were present. The stomach was healthy and contained a little pale yellow clear fluid but no blood. The first part of the duodenum was normal. On the pancreatic surface of the duodenum in its second part around the papilla of Vater was a crateriform ulcer irregularly oval in shape, two centimetres by one centimetre, with its long axis parallel to that of the bowel. The edges of the ulcer were smooth and its base was formed by pancreatic substance in the midst of which were the open mouths of two vessels of the third degree, probably branches of the superior pancreatic duodenal artery. The ulcer and the intestinal walls partook in the general pallor of the body. The rest of the intestinal tract

[2] American Medicine, Oct. 24th, 1903.

was healthy but its wall was lined with thick, tough material—altered blood—especially noticeable round the ileo-cæcal valve and cæcum. The appendix stump was white, shrivelled, and fibrous. The spleen was normal. The liver was fatty; no cirrhosis was present. The gall-bladder contained thick brown bile. The right kidney contained a small whitish tumour, possibly lipomatous or gummatous, otherwise both organs were normal. The pancreas on section appeared to be normal.

A section through the margin of the ulcer with the attached pancreas showed that the floor of the ulcer was formed by the thickened capsule of the pancreas, the walls of the intestine being completely destroyed. Very little inflammatory change was seen and the pancreas showed only one area of fibrinous exudation with destruction of the pancreatic tissue. The kidney showed a large infarct and the renal artery and vein contained a thrombus which was beginning to organise. The liver was fatty and showed slight chronic venous congestion and at points were seen large numbers of polymorphonuclear leucocytes in the capillaries.

In a consideration of this case, the possibility must be borne in mind that the duodenal ulcer had been present before the operation and had no intimate connexion either with the appendicitis or the subsequent appendectomy. After death the patient's wife stated that he had sometimes "complained of his stomach" but the attacks were considered and successfully treated as "liver." The patient stoutly denied indigestion, his appetite always being "like a horse." Whether or no, it is certain that there had never been any intestinal hæmorrhage before the operation. The possibility of the duodenal ulcer being consequent on the operation or on the breaking down of the skin incision is worthy of some consideration.

Melæna was first noticed six days after the operation. During this time inflammatory changes had been going on in the skin wound although there had been no practical evidence of septic infection or intoxication in the pulse or temperature. Possibly the slight jaundice noted by the nurse in the skin and conjunctiva was evidence of some septic process or possibly of some preliminary swelling and œdema in the region of the papilla of Vater causing obstruction consequent on the excretion by the bile of some products of septic absorption. The pathology of duodenal ulcer following burns has been variously ascribed as due (1) to the excretion in the bile of irritating substances due to the imperfect carbonisation of the tissues,[1] or (2) to the auto-digestion of a distinct arterial area, the vitality of which has been lowered by a preceding thrombosis in the vessel, the result of the elimination by the liver of some irritating substance derived from septic or other changes in the burnt tissues which is capable of inducing thrombosis in the structures in close contiguity to the entrance of the bile duct or at any rate of inducing ulceration.[2]

Gastric hæmorrhage following laparotomy has lately received much attention. In 1899 von Eiselsberg reported cases of gastric and duodenal hæmorrhage after laparotomy and he explained the etiology as due to an embolus arising from a thrombosis in the injured omentum. By experiment on animals he demonstrated the possibility of this occurrence. His experiments were confirmed by others, but Engelhardt and Leek could only produce the condition with septic emboli, von Eiselsberg's experiments being aseptic. Purves of Edinburgh, Rodman of America, Robson and Moynihan, and others have written on the subject, Rodman suggesting a septic thrombus in the omental vessels. It seems fairly established that ulceration subsequent on embolism may follow injury or ligation of the mesentery or omentum.

In the particular case on record the great omentum was originally adherent to the umbilical opening and had to be detached before the removal of the appendix and may have been damaged. The thrombus in the renal artery and vein, together with the infarct in the kidney, gives colour, if not proof positive, to the embolic theory as to the production of duodenal ulcer.

Owing to the courtesy of Mr. F. Victor Milward of Birmingham, we are able to publish the notes of the following case.

The patient was a female, aged seven years. She had been ill at home for 14 days. On admission there were tenderness and slight bulging in the right iliac fossa and general distension of the abdomen. An incision was made over the appendix and two ounces of pus were evacuated. The abscess cavity was outside the cæcum and was densely walled round by adhesions, the abdominal cavity being apparently quite shut off. The appendix was not found. From this time until she died 30 days later the wound showed not the slightest tendency to heal—in fact, her recuperative powers were absent and the illness showed her to be in a markedly asthenic condition. The temperature was subnormal for 14 days and then it rose and became regularly intermittent. Enteric fever was suspected but the Widal test was negative. The patient also developed several pyæmic abscesses towards the end, containing streptococci, but the leucocyte count never rose to normal. Anyhow, it was subnormal while they were developing. For ten days after admission the pulse was from 120 to 146 and at the end of this time the leucocyte count was 9800. The bowels were confined for the first five days, then she had diarrhœa for three days, and afterwards intermittent diarrhœa and constipation. Eight days after admission a slight swelling, which was tympanitic on percussion, appeared in the epigastrium. This very slowly increased in size but varied considerably with the state of the bowels, being more tympanitic and larger during constipation. It was thought to be the distended colon. On the twenty-fifth day the swelling had so increased that the epigastrium was incised and a cavity was discovered over the stomach, containing gas and a very little pus and lymph. This cavity was also densely shut off from the general peritoneal cavity by adhesion of the periphery of the stomach to the anterior abdominal wall. On the following day gastric contents were found in the cavity as well as a perforation of the anterior walls of the stomach of the size of a threepenny-piece. An attempt was made to suture the perforation but it was hardly successful owing to the adhesions preventing the margins coming together. The aperture was, however, closed for the time being but the stitches had cut through by the next day and great leakage from the stomach followed. Nutrients were tried, combined two days later with mouth feeding, but as since admission the patient had passed everything under her and the food by the mouth was continually leaking through the stomach she was unable to retain any nourishment and she died from inanition five days after the second operation and 30 days after the first.

At the post-mortem examination it was impossible to discover any passage through the adhesions round the appendix whereby pus could have tracked up to the gastric region. The perforation in the stomach had evidently occurred from *outside*, because the serous coat was far more ulcerated than was the mucous, the aperture in the latter being quite small. It is difficult to understand how gas alone could have been leaking out from the eighth to the twenty-sixth day without any solid or liquid food escaping or why ulceration should have commenced where it did in the middle of the anterior wall of the stomach. When the epigastric swelling was first opened the gas was thought to be due to a gas-forming organism since the ulceration covered by lymph was not seen. There was no sign of tuberculosis at the necropsy.

Mr. Milward remarks: "In this case was the stomach condition a direct infection from the appendix or was it due to a peptic (?) ulcer of the stomach in an ill-nourished child? There were signs of perforation eight days after admission so that if the infection came from the appendix it probably had tracked up there before the first operation. The appendical abscess was securely shut in which is against any extension from it; on the other hand, there was an entire absence of any pre-existing ulcer of the stomach, the wall of the ulcer shelving until it reached its very surface. I am yet in two minds about the cause."

In THE LANCET of June 25th, 1904, p. 1789, Warren Low published a case of perforated gastric ulcer with appendicitis, and in THE LANCET of June 11th, 1904, p. 1641, Cheyne and Wilbe reported a second similar case. In Warren Low's case the girl had suffered some time previously from indigestion, although there had been no vomiting or hæmatemesis. In Cheyne and Wilbe's case the boy, aged 13 years, had had no stomach symptoms, and age and sex are probably unique for a case of perforating gastric ulcer. The possibility in both these cases, and in the case quoted above, of the ulceration being *propter* rather than *post* the appendicitis opens up a new field. The "appendicitis" question is not yet dead, its pathology has not yet been

[1] Cheyne and Burghard: Surgical Treatment.
[2] Rose and Carless: System of Surgery.

worked out, and there is room for research in the possibilities of thrombosis which must take place in the appendical vessels during an inflammatory attack.

Carlisle.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF STREPTOCOCCAL CELLULITIS.

(Under the care of Dr. DE HAVILLAND HALL.)

THE patient, a woman, aged 46 years, attended at Mr. P. R. W. de Santi's out-patient department at the Westminster Hospital on May 16th, 1904, suffering from acute lacunar tonsillitis on the left side with herpes of the lips. She was treated with salicylate of sodium and in ten days was apparently well. On the 30th she attended at the out-patient department, complaining of pain and of a great swelling in the mouth of 24 hours' duration. Finding that her temperature was 103·5° F. Mr. de Santi directed that she should be admitted into the hospital.

On admission at 3.30 P.M. on the 30th her temperature was 104·6° and her pulse was 140. The patient was unable to protrude the tongue, which was pushed upwards by a large œdematous swelling. There was also some brawny swelling beneath the chin. Nothing abnormal was to be detected in the respiratory or circulatory system. The urine was of specific gravity 1016 and contained a large quantity of albumin with blood and hyaline, granular, and cellular casts. The patient was ordered three pints of milk, two eggs, and three ounces of brandy in the 24 hours, and a mixture containing five grains of carbonate of ammonium, half a drachm of tincture of cinchona, and ten minims of tincture of nux vomica every four hours. The sublingual swelling was incised but only serum was evacuated. A mouth-wash of borax and boric acid was ordered to be used every hour. Three and a half hours after admission her temperature rose to 105·4°. She was then injected with ten cubic centimetres of anti-streptococcic serum and this was repeated four hours later, when the temperature had fallen to 102°. By 11 A.M. of the 31st the temperature had fallen to normal. She was much better and the swelling in the mouth had much diminished. The pulse was 80. She had two more injections of serum on this day. From this date the patient's progress towards recovery was uninterrupted and the temperature only once rose to 100°. The urine, which for the first two days was very scanty and highly albuminous, rapidly increased in quantity; on the sixth day after admission she passed 60 ounces containing only a trace of albumin. She left the hospital a few days later quite well. A swab was taken on June 1st and Dr. R. G. Hebb gave the following report: "Fresh film shows streptococci, staphylococci, and bacilli (two kinds). Cultures show streptococci and a large thick bacillus (Gram staining) and a thin bacillus (non-Gram staining). No evidence of bacillus diphtheriæ."

Remarks by Dr. DE HAVILLAND HALL.—I happened to be in the ward when the patient was admitted and I was much impressed by her grave condition. She could hardly open the mouth, so that it was impossible to examine the pharynx and larynx. The conclusion I came to was that she was suffering from a condition closely resembling angina Ludovici and from the marked signs of septic intoxication I gave a very unfavourable prognosis. The immediate improvement which followed upon the injection of anti-streptococcic serum was so striking that there can be little doubt that it occurred as the result of the injection. I have seen similar cases in the pre-serum days run a rapidly fatal course. The result of the discussion at the Medical Society of London on Serum and other Inoculations in Pyogenic Infections on Jan. 11th of this year was to emphasise the necessity of the early administration of the serum so as to neutralise the toxins before irrevocable lesions had been set up. As we are still in the tentative stage of the employment of serums in pyogenic cases it is extremely important that a record should be kept of cases in which they are used, including the chief clinical feature of the case, a report on the bacteriological examination, and the result. If this were generally done we should soon be in a condition to appraise the serums at their true value.

It was not possible to localise definitely the mode of infection but it was probably connected with the patient's teeth, as she had several decayed stumps on both sides. Oral sepsis is still too little regarded by the general public and it behoves the medical profession to draw attention to the necessity of keeping the mouth in a wholesome condition. The investigations of Dr. William Hunter on the causation of pernicious anæmia indicate another danger of oral sepsis. The necessity of caution in drawing conclusions from the results of treatment was forcibly brought to my notice within the last few days. On July 19th I was called in consultation to see a young man, aged 20 years, with acute œdema of the larynx, following what appeared to have been a septic sore throat. I found the patient with a temperature of 102° and a pulse of 104. He had great pain and extreme difficulty in swallowing. On laryngoscopic examination the epiglottis, right aryepiglottic fold, and the arytenoids were very œdematous, so that it was not possible to obtain a view of the interior of the larynx. The urine contained albumin. The conclusion I came to was that the patient had a streptococcal laryngitis and if I had had the anti-streptococcic serum at hand I would have given an injection then and there. Shortly after the consultation the temperature rose to 103°. I had a telephone message in the evening to say that the patient was much better. During the night he had profuse sweating and when I saw him in the morning his temperature was normal and the œdema of the larynx had greatly diminished. Supposing that an injection of serum had been given overnight the rapid improvement would have been credited to it. The swab I took for examination showed the presence of streptococci and staphylococci. The patient made a rapid recovery. He was treated with a gargle and spray of borax and boric acid and the internal administration of the tincture of the perchloride of iron in full doses.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

A CASE OF RUPTURED TUBAL PREGNANCY; OPERATION; RECOVERY.

(Under the care of Mr. J. BELL.)

THE patient, a Chinese, aged 27 years, was admitted to hospital on May 25th, having been seen four hours previously by Dr. G. P. Jordan who diagnosed a ruptured tubal pregnancy. On admission she was very blanched, with a quick running pulse, abdominal distension and pain, and giving a history of amenorrhœa for four or five months. After the usual preparation the patient was anæthetised by Dr. W. V. M. Koch and with the assistance of Mr. E. A. R. Laing the abdomen was rapidly opened in the median line. Blood and blood-clots were quickly turned out and a fœtus was found of from four to five months old. The pregnancy had occurred in the isthmus of the right tube immediately outside the uterus, to the body of which the placenta was adherent. The tube was ligatured on the distal side, the peritoneal covering around the placenta was incised, and this was cut off with one sweep of the knife opening the uterine cavity by a hole which admitted the tip of the little finger. This was well closed with six deep silk sutures, the abdomen was washed out rapidly with saline fluid, and the incision was closed with silk. For the next 48 hours the patient's condition was critical, but under stimulants (strychnia, digitalis, camphor, brandy, and the like) and saline rectal injections every two hours she rallied from the shock. The abdominal wound healed rapidly by first intention and there was not at any time the slightest abdominal trouble. A sharp rise of temperature on the fifth day to 105° F. subsided as soon as the cervix was dilated, giving exit to a little discharge and membrane. The patient went out on June 13th quite well.

Remarks by Mr. BELL.—The mortality-rate for this operation being so high every successful case is worth reporting. The patient was as bad as one could imagine. Whether the

treatment was *secundum artem* or not I cannot say, as this condition would appear to be rare—the placenta attached to the body of the uterus—judging from the literature at our disposal. In any case the patient was too ill for complete removal of the uterus. Whether any untoward result will follow the next pregnancy the future will prove.

Reviews and Notices of Books.

The Treatment of some Acute Visceral Inflammations and Other Papers. By DAVID B. LEES, M.A., M.D. Cantab., F.R.C.S. Lond., formerly Scholar of Trinity College, Cambridge; Senior Physician to the Hospital for Sick Children, Great Ormond-street; Physician to St. Mary's Hospital. London: John Murray. 1904. Pp. 300. Price 6*s.*

THE first part of this volume consists of three lectures delivered before the Harveian Society of London in November, 1903. In them Dr. Lees discusses many clinical details in connexion with carditis and pericarditis, pneumonia, empyema, pleurisy, appendicitis, and nephritis. He lays stress on certain points which he considers have not received sufficient attention from practitioners and also dwells on various therapeutical measures which he believes to be of especial importance. In all diseases of the heart and lungs Dr. Lees writes that it is a matter of great importance to ascertain by light percussion the size of the left ventricle and of the right auricle. He points out that the outline of the pericardial dulness on the right side is mainly indicative of the state of distension of the right auricle. He gives directions as to the manner in which the percussion should be carried out; unless certain precautions (which he particularises) are taken, pulmonary or gastric resonance is brought out at the same time as the truly cardiac resonance and confuses the result. He further states that with the normal heart it is usually difficult to detect any dulness in the third right space, but it is always definite and considerable in the fourth. In the fifth space the partial liver dulness complicates the result. He then urges that it is of the greatest practical importance that the extent of the dulness in the fourth right space should be carefully determined in every examination of the heart and, he adds, "no such examination is anything but fallacious unless this point has been carefully investigated." Dr. Lees is very emphatic on the importance of relieving a distended right heart by leeches or moderate venesection.

The remarks on the administration of sodium salicylate in acute rheumatism and in chorea will be read with interest. Dr. Lees is an advocate of large doses of this drug combined with still larger doses of sodium bicarbonate. He advises that to an adult 20 grains of sodium salicylate with 40 grains of sodium bicarbonate should be given every two hours during the day and every four hours during the night. To a child of from six to ten years old ten grains of salicylate and 20 grains of bicarbonate may be given at the same intervals. After a day or two he gives 15 grains of the salicylate with 30 grains of bicarbonate, and, if necessary, this may be increased to 20 and 40 grains respectively. He maintains that children require proportionately larger doses than adults, for in them the rheumatic infection is much more intense. These are larger doses than are generally administered but Dr. Lees speaks from a large experience. He denies that salicylate has such a depressant action on the heart as is usually maintained. He suggests that the symptoms of depression that have sometimes been observed might be due to impurities of the drug. Especially in the early years of its use, when a sudden demand arose for large quantities of the new remedy, it is quite likely that adulteratives due to imperfect methods of preparation may have caused toxic symptoms. This explanation is probably a correct one, and now that the drug is carefully prepared and purified the phenomena indicating cardiac depression are but rarely noted. Dr. Lees firmly believes in the beneficial value of the external application of ice as a local remedy in pneumonia, in pericarditis, in pleurisy, in many cases of appendicitis, and in acute nephritis.

The remainder of the book is occupied with the reproduction of articles which have already appeared in THE LANCET, in the *British Medical Journal*, in the transactions of various medical societies, or in other publications. Dr. Lees has included them in this volume partly because they show the gradual evolution of the ideas contained in the lectures above alluded to and partly because they deal with cognate subjects. Among other points attention is drawn to the dilatation of the left ventricle which is constant in acute and subacute rheumatism and to the still more dangerous dilatation which is so prone to occur in diphtheria and in influenza. Appropriate treatment is suggested for these conditions. Taken as a whole this volume is well worthy of careful study, for it contains information which is the outcome of personal clinical experience and we think that Dr. Lees's hope that these papers may be found to be of permanent value will be fully realised.

Adolescence: its Psychology, and its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education. By G. STANLEY HALL, Ph.D., LL.D., President of Clark University and Professor of Psychology and Pedagogy. In two vols., royal 8vo. New York and London: Appletons. 1904. Pp. 589 and 784. Price 31*s.* 6*d.*

IT would be very difficult, even if possible, within the limits of the space at our disposal, to give any adequate idea of the contents of a work which covers nearly 1400 pages, which is devoted to a consideration of all the varied aspects of the period of transition from childhood to manhood or to womanhood, and which therefore deals not only with manifest bodily increase but also with intellectual and sexual development and with their actions and reactions upon each other. The main idea of the writer, as we apprehend it, is that, somewhat as the growth of the human embryo represents successive stages of animal life, so the childhood of mankind is largely built up of, or at least is representative of, vestiges of the earliest history of the race; that these, as adolescence approaches and is attained, are gradually superseded by such vestiges of comparatively recent periods as may properly be described as atavism; and these again by the attainment of contemporary standards of thought and action. From all this he derives the suggestion that "man is not a permanent type but an organism in a very active stage of evolution towards a more permanent form." After a preface in which these conceptions are set forth we have a series of chapters on growth, both generally and in relation to particular organs and functions; on diseases; on juvenile faults, immoralities and crimes; on sexual development; on periodicity; on adolescence in literature, biography, and history; on changes in the senses and the voice; on evolution and the feelings and instincts characteristic of normal adolescence; on adolescent love; on adolescent feelings toward nature and a new education in science; on savage public initiations, classical ideas and customs, and church confirmation; on the adolescent psychology of conversion; on social instincts and institutions; on intellectual development and education; on adolescent girls and their education; and on adolescent races and their treatment. These chapters are of very dissimilar character and of very unequal merit, some of them being largely composed of quotations from writers by whom customs and rites have been described with varying degrees of accuracy and of prolixity, while others are mainly

doctrinal or argumentative. The author acknowledges his indebtedness to some of his former pupils for assistance in the preparation of his work, and it may be presumed that this assistance has been given partly by the collection of materials from various sources and partly by reducing these materials to more simple forms. The acknowledgment may be the explanation of the differences of style which are presented by the contents even of adjacent pages.

Assuming him to be solely responsible for the lengthy preface in which his doctrines and objects are unfolded, and for many paragraphs and pages in other parts of the work in which they are more fully set forth, we conclude regretfully that Professor Stanley Hall is not a master of English. His sentences are frequently so confused and involved as to render his meaning extremely doubtful; and his vocabulary is limited though ornate. He rarely states the simplest arguments without the help of a vocabulary some of which is presumably founded upon Greek and which requires a special glossary for its explanation. In the first paragraph of the preface we find a sentence typical of only too many others by which it is succeeded. "That, recognising fully all that has hitherto been done in this direction, the genetic ideas of the soul which pervade this work are new in both matter and method, and that if true they mark an extension of evolution into the psychic field of the utmost importance, is the conviction of the author." This means, we fancy, that the author, while recognising what has previously been done in the same direction, is yet convinced that the genetic ideas of the soul which pervade his work are new in matter and method, and that, if true, they mark an important extension of evolution into the psychic field. By such a transposition we at least get rid of that queer phrase "the psychic field of the utmost importance," although what a "genetic idea of the soul" may be, or how the "matter" of an idea is to be distinguished from its "method," or what the "psychic field" is, are all questions which may, we think, be described as difficult of answer.

In the preface alone we have the words epistemology apriorism, creationism, spiritism, ephebic, banausic, folk-soul, rebasing, phyletic, phyletically, psychogenetic, psycho-physical, subjectivisms, *pigmoid*, paleopsychic, meristic, nodality, phylum, psychonomic, moduli, femininists, haptic, ephebeitic, norms, disciplines, and contentless. It is true that most or all of these words are to be found in Chambers's or Webster's Dictionary, in the great Oxford Dictionary, and in Gould's Dictionary of Medicine, but few of them can be said to be in common use, and a text-book can hardly be said to be intelligible to ordinary scientific readers when so many unusual words are employed. Moreover, the definitions in the dictionaries that we have consulted do not fit consistently with Professor Hall's intentions when using the words. The questions thus raised are, we venture to think, of considerable scientific and literary importance. It is, no doubt, true that there may be occasions, probably of very rare occurrence, when a word derived from Greek may be really helpful in expressing a shade of meaning to those who have a thorough knowledge of the subtleties of the original; but it is a confusing and misleading process to construct a vocabulary out of Greek words which may themselves be interpreted in different senses and which are therefore liable to be used in one sense and to be understood in another. A good deal of the pseudo-scientific language of the present day is absurd and a good deal is unintelligible, and it is our duty to protest vigorously against an extension of the habit of defiling English, whether the author be an Englishman or an American. We have no quarrel with Professor Hall, in whose voluminous treatise we have found some ideas which are new and much which is interesting or instructive. But we desire to protest as earnestly as we can against the degradation of our noble language.

The Experimental Bacterial Treatment of London Sewage. By FRANK CLOWES, D.Sc. Lond., F.I.C., Chemist to the London County Council; and A. C. HOUSTON, M.B., D.Sc. Edin. Printed for the London County Council: P. S. King and Son. Pp. 242. Price 10*s*.

To those who like ourselves have followed the important reports issued from time to time by the chemist and the bacteriologist to the London County Council on the experimental bacterial treatment of London sewage a re-issue of the reports in a connected form will be of the greatest interest and value. This reprint gives an account of the experiments carried out by the London County Council between the years 1892 and 1903. Professor Clowes is responsible for Division I., which deals with the chemical aspect of the experiments, and Dr. Houston with Division II., which deals with the bacteriological study. In Division III. the bacterial treatment of sewage and of sewage effluents at various centres throughout the country is reported upon, the information being supplied by the local authorities concerned. In this section the results of the processes are recorded in tables which give particulars as to the nature of the installation, the number of beds, their working area, surface, depth, and cost of making, together with the cost of treating the sewage, and the degree of purification effected. These tables will be of the utmost service to the country, containing as they do exactly that information which those who are contemplating the adoption of a purification scheme will consult with most profit and instruction. Information of practical utility on almost every page is based upon the results of actual experiments. It is difficult to estimate, in fact, the value of this work in connexion with the whole problem of sewage disposal and purification throughout the country.

The appendix contains additional information upon the subject obtained during the experimental work carried out by the chemical staff of the London County Council. Here will be found some very important conclusions in connexion with the disposal of sewage by bacterial treatment. It is shown that, far from bacterial treatment increasing the number of bacteria, a properly managed bacterial installation will deliver an effluent which contains fewer bacteria than were present in the crude sewage. Again, a considerable reduction in the number of bacteria present in river water by passage down the stream is shown to take place. It was, for example, noticed that in proceeding down the Thames a very great diminution in the number of bacteria occurred in the stream 27 miles below the point at which the effluent is discharged. In fact, when a point off Southend pier was reached the bacteria had decreased in number to that not unusually found in the drinking water supplied by the water companies to London consumers after having undergone subsidence and filtration at the waterworks. This very considerable reduction in the total number of bacteria, and the disappearance of characteristic intestinal organisms, would lead to the conclusion that danger is not to be apprehended from bacterial contamination of the water of the estuary at or below Southend arising from the metropolitan sewage effluent. Further investigation made to ascertain the extent of the diffusion or dispersal of the sludge in Barrow Deep showed that the present method of disposing of the sludge by discharging it on the ebb tide is a satisfactory one, and if pollution of the foreshores of Kent or of Essex should arise it must be due to local causes only and not to the discharge of either the London effluent or sludge. What a different state of things this is from that which prevailed 20 years ago, when the lower reaches of the Thames were in a filthy condition from the raw sewage discharged into the river and when the banks were loathsome with stench arising from the putrefactive discharge of the metropolitan sewers. A word of praise is due

to the London County Council for placing at the disposal of those who are interested in the satisfactory treatment of sewage these results of the lengthened and systematic experimental bacterial treatment of London sewage. It would appear that the experiments, as Dr. Clowes points out, have now arrived at a stage when their practical application could be simply carried out on a large scale. It is difficult to realise that the problem of the sanitary disposal of London sewage which has been a vexed question for many years may actually be successfully solved.

Lehmann's Hand Atlanten: Atlas und Grundriss der Lehre von den Augenoperationen. Von Professor Dr. O. HAAB in Zürich. Mit 30 farbigen Tafeln und 154 Schwarzen Abbildungen von Maler J. FINK. München: J. F. Lehmann's Verlag. 1904. Preis 10 Marks. (*Lehmann's Hand Atlases: Atlas and General Plan of Operations on the Eye.* By Professor Dr. O. HAAB of Zürich. With 30 Coloured Plates and 154 Drawings in the text by the artist J. FINK. Munich: J. F. Lehmann. 1904. Small 8vo. Pp. 399. Price 10*s.*)

THIS volume constitutes the third of the series of cheap and useful atlases published by the firm of Lehmann in Munich, the two others being devoted to "The External Diseases of the Eye" and to "Ophthalmoscopy." We have had occasion to notice favourably these volumes and the present one maintains the high standard of Professor Haab's illustrated works. The circumscribed area to which ophthalmic surgery, if the term may be used, is restricted, as well as the particularly distinct and well-defined landmarks formed by the angles and margins of the lids, periphery of the cornea and the pupil, are favourable for illustrations of the size permitted by these pages, for they can be executed with little diminution of either the eye or the instruments. Professor Haab remarks that an experience of more than 30 years has guided him in the selection of the operations he has delineated, the larger number of which he has himself performed. The work commences with some general observations pointing out the importance of cleanliness both in the operator and his assistants, the necessity of a free supply of water, of cleanliness and good ventilation in the room, and, in order that the patient may keep as still as possible, the proximity of an electric bell to his bed. The interior of the room should be of a dull grey enlivened with a darker pattern. He has operated for cataract in a room ordinarily used for ophthalmoscopic purposes, which is surely going a step too far. Ordinarily he prefers a good western light. He limits the employment of chloroform and ether to severe cases and as a general rule uses solutions of cocaine to produce local anæsthesia. It is, he thinks, to be borne in mind that even cocaine is a poisonous drug and that the quantity applied at any single operation should not exceed 0·05 of a gramme or less than a grain. The usual antiseptic measures in regard to instruments and as applied to wounds generally are given in full.

The succeeding chapters deal with the operations upon the eye in the following order:—1. The operations on the globe, including cataract, iridectomy, sclerotomy, tattooing, removal of foreign bodies from the cornea and of pterygia, staphylomata and dermoid growths, the detachment of synechiæ, and the application of the magnet for the extraction of fragments of iron from the anterior chamber. 2. Operations outside the globe, as those for squint, for the enucleation of the bulb and for the removal of tumours from the orbit. 3. Operations on the lids, as for ptosis, ectropion and entropion, and lastly, four operations on the lacrymal organs. The descriptions of the various operations are brief but clear, and in many instances the methods suggested by different surgeons are given. Thus, in the operations for strabismus the modes of operation for tenotomy by v. Graefe, v. Arlt, and Snellen are given and those for advancement of the antagonist muscle adopted by Knapp, A. Weber, v. Wecker, Landolt, Prince, Verhoeff, and Worth are described; in addition, the operations for the advancement of the capsule by v. Wecker and Knapp, those for folding or plaiting the tendon by Todd and Brand, those for suturing the tendon by Schwriggen and Koslu, and the myotomy operation by L. Müller. As many of these operations are illustrated by woodcuts in the text, by drawings of the instruments required, and by a chromolithograph, the surgeon can experience difficulty only from an *embarras des richesses*. The operations for ptosis, entropion and ectropion are almost equally numerous and are equally well and fully described. The serious operation of Krönlein for the exposure of the retrobulbar space, which is appropriate for the removal of orbital tumours, is given at great length and is illustrated by several good drawings. The excellent results that may sometimes be obtained by plastic operations successfully planned and carried out are demonstrated by Plates 21 and 22, which give the aspect of the patient before and after an operation for the cure of the deformity resulting from a severe burn caused by the bursting of a steam-pipe. Plate 21 exhibits a scarred face with both upper and lower eyelids everted on the right side, exposing the globe. Ulceration of the cornea has commenced, due to the loss of the protection afforded to the eyelids. The first operation for the relief of the ectropion was undertaken on Feb. 14th, 1902. It consisted in freeing both lids by a deep incision and their edges, without being refreshed, were sewn together. Four days subsequently a large graft was taken from the inner side of the arm; great improvement followed and the first operation was supplemented by the application of a second graft of smaller dimensions, and still later by a tarsorrhaphy. Plate 22 exhibits the final result, which is shown to be extremely satisfactory. The book will prove a very useful addition to the library of the ophthalmic surgeon as well as to the general practitioner, and it is as well executed in every respect as the preceding volumes.

A *Manual of Midwifery.* By ALFRED LEWIS GALABIN, M.A., M.D. Cantab., F.R.C.P. Lond. Sixth edition. Illustrated with 329 engravings. London: J. and A. Churchill. 1904. Pp. 913. Price 14*s.* net.

WE notice with pleasure that Dr. Galabin has brought out another edition of his excellent text-book of midwifery. He has revised the book with care and has added much new material in the chapters on Development, Extra-uterine Gestation, Placenta Prævia, Accidental Hæmorrhage, Cæsarean Section, Deciduoma Malignum, and Puerperal Septicæmia. Perhaps the most instructive and interesting addition is the section on the relationship of erysipelas to puerperal fever. The connexion of these two diseases has long been a matter of interest and our conception of their exact etiology is much clearer now we know that the streptococcus of erysipelas and that of puerperal fever are only varieties of the same organism. Dr. Galabin brings forward very interesting evidence of the relation of puerperal septicæmia to erysipelas and other diseases in the form of diagrams showing by means of curves the percentage above or below the mean rate of deaths from the various diseases in successive years. These diagrams show that the curves of annual variation for puerperal fever and erysipelas are almost identical both for England and Wales and for London, while the curves for septicæmia and pyæmia have a considerable but not so close a resemblance. In another figure showing the weekly death-rates of puerperal fever and erysipelas and other diseases in London during 1893 with the rainfall at Greenwich the relationship of the incidence of the two diseases is very striking indeed. The two curves of puerperal fever and erysipelas are almost

precisely the same, while it can be seen that the curve of the mean weekly mortality of puerperal fever has a chief maximum in January and a slighter maximum in October and November. The excessive mortality which occurred in 1893 was greatly exaggerated in November and occurred two or three weeks after a heavy rainfall in October, while a smaller maximum occurred at a similar interval after a heavy rainfall in July. The suggestion put forward by the author is that saprophytic streptococci were in this year, at any rate, disseminated during drought and that they multiplied in subsequent damp. It would seem, then, as if cases of both puerperal fever and erysipelas occurred in proportion to the general abundance of streptococci, this in its turn being dependent upon climatic and other conditions. A large number of new figures has been added, especially in the chapter on the Early Development of the Ovum, which has been extensively revised and rewritten. The work maintains its position as one of the best of the text-books available for English students and we have no doubt that the present edition will meet with the same great success as its predecessors.

LIBRARY TABLE.

Handbook to the Natural History of Cambridgeshire. Edited by J. E. MARR, Sc.D., F.R.S., and A. E. SHIPLEY, M.A., F.R.S. Cambridge: At the University Press. 1904. Pp. 260. Price 4*s.* net.—The object of this guide is to afford help to those students of natural history who desire to make observations in the Cambridgeshire district. The table of contents at once indicates the value of the work, for the various sections are from the pens of well-known writers. The Geology is treated of by Mr. W. G. Fearnsides, Vertebrate Palæontology by Mr. R. Lydekker, the Flora by Mr. A. Wallis, Prehistoric Archæology by Mr. W. L. H. Duckworth, and the Zoological portion by 14 different writers. Mr. W. Farren is responsible for the introduction to the chapter on Insects and for the sections on the Hemiptera and Lepidoptera. Two excellent maps will be found in the volume. The one is a botanical map of the Cambridge district, the other a geological map by Mr. H. H. Thomas, M.A., of H.M. Geological Survey; the latter is inclosed in a pocket in the cover of the volume. The article on Vertebrate Palæontology is the one written by Mr. Lydekker for the "County History of Cambridge" and is here allowed by the editors and publishers of the Victoria History of the Counties of England to appear in advance. From the point of view of the student of vertebrate palæontology Cambridge is an unusually interesting county, since it contains two deposits which are practically unique—the coprolite band of the greensand and the Barrington deposit, the latter yielding mammalian remains of the Pleistocene age remarkable for their perfect state of preservation and for the numbers in which they occur. With the disappearance of the boggy fen many of the characteristic plants, insects, and animals have disappeared or become extremely rare. A small area at Wicken Fen, however, is still preserved in its original state and shows the former character of extensive tracts of Fenland. In Wicken Fen lovers of the lepidoptera may still find in considerable numbers a beautiful butterfly which we shall not name, having no intention to be party to its extermination by ruthless collectors. The book is a model of what such a handbook should be. Copies of it were presented by the Syndics of the University Press to the members of the British Association at the recent meeting.

British Rainfall, 1903. On the Distribution of Rain over the British Isles during the year 1903, as observed at nearly 4000 Stations in Great Britain and Ireland. Compiled by HUGH ROBERT MILL, D.Sc., LL.D., F.R.S.E. London: Edward Stanford. 1904. Pp. 300. Price 10*s.*—A year of abnormal rainfall entails exceptionally heavy work in the compilation of the annual volume; the date of completion is consequently somewhat later than last year. The author hopes in future to be able to get the volume through the press before the latest statistics in it are much more than six months old. The plan of Part I. practically remains unchanged. A new section dealing with the duration of rainfall has been introduced. Headlines have been adopted throughout the volume to guide the reader to the facts of which he is in search. The special articles deal with the three wettest years in the annals of British rainfall, of which 1903 was one, and with the remarkable daily rainfall of June, 1903. In Part II. the section on Drought is short, but discussions of rainy spells on similar lines, of the intensity of daily rainfall, and of the number of rainy days, add 17 pages of entirely new matter. Each remarkable case of a widespread fall of rain is illustrated by a map. All comparisons unite in pointing out three years, and three only, since *British Rainfall* was founded, as being very wet indeed—these are 1872, 1877, and 1903. Only one other year in the nineteenth century can compare with them and that is 1852. The section on Heavy Rains in Short Periods, which, as the author says, should be one of the most interesting in the volume, gives little satisfaction, as very few observers as yet possess recording gauges and those who do rarely have them fitted with a drum rotating in one day. Rules are given at the end of the volume for securing uniformity in recording the rainfall. The book is a carefully prepared record.

Analytical Records
FROM
THE LANCET LABORATORY.

"TABLOID" LITHIUM CITRATE AND UROTROPINE (EFFERVESCENT).
(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

UROTROPINE has the reputation of being a diuretic and a solvent of uric acid, while it has been shown to be valuable as a urinary antiseptic. It is an amine compound with marked alkaline reaction. Its combination with lithium citrate has therefore obvious advantages. The tabloid contains three grains of urotropine and five grains of lithium citrate, together with an effervescent basis which makes the administration of these drugs agreeable.

AUSTRALIAN THREE-STAR BRANDY.
(MILNE AND CO., ADELAIDE; AND D. AND J. FOWLER, LIMITED, 2, LIME-STREET-SQUARE, LONDON, E.C.)

There is no reason why Australia should not produce fine brandy, as excellent wine is produced there. Time, however, must be relied upon in order that the brandy may be reduced to a matured condition fit for consumption. Strong wines of the colonial type are apt to produce full, rough brandies which would require considerable maturing. The sample before us possesses the characteristics of a genuine wine spirit but the following analysis indicates that it is not entirely produced in the pot still. The secondary products, recorded in grammes per 100 litres of absolute alcohol present, were as follows: acidity reckoned as acetic acid, 50·04; aldehyde, 12·40; furfural, 0·50; ethers reckoned as ethyl acetate, 63·36; and higher alcohols, 100·00. For a pot-still wine spirit these results show a decided deficiency in the amount of furfural and ethers. Further results of analysis gave alcohol, by weight 39·80 per cent., by volume 47·13 per cent., equal to proof spirit 82·59 per cent.; and extractives, 0·28 per cent. Neither

the amount of the extractives nor the fixed acidity indicates any lengthened storage in wood.

MALTOX.

(THE MALTOX CO., LIMITED, 17, TUDOR-PLACE, TOTTENHAM COURT-ROAD, LONDON, W.C.)

Maltox has the appearance of ordinary beef extract. Besides, however, the extractive principles and to some extent the nutrients of beef it contains malt extract free from sugar and vegetable extract also. It has a pleasant flavour of beef. Our analysis gave the following results: moisture, 23·44 per cent.; mineral matter, 22·37 per cent.; and organic matter, 54·19 per cent., containing seven parts by weight of nitrogen. The solution of the extract gave an abundant precipitate with bromine, indicating the presence of the albuminous principles of beef. The preparation therefore supplies not only the stimulating but the reparative principles of beef also. Maltox is very rich in salts and particularly those of potassium. The preparation presents some novel features and, on the whole, we regard it as a useful addition to dietetic preparations. It is evidently prepared with the view of preserving the nutrient as well as the more stimulating principles of meat.

ALBADA (MARGARINE).

(J. A. VAN DEN BOSCH AND ZONEN, ALKAMAAR, HOLLAND. AGENCY A. E. WOOLGAR WHEATLY, COLONIAL HOUSE, 17, TOOLEY-STREET, LONDON BRIDGE, S.E.)

Margarine is wholesome enough and there should be no prejudice against it so long as it is honestly described. The sample submitted to us was made in Holland and according to our examination it is an excellent specimen of margarine and is a wholesome substitute for butter, while it is about one-half the price. Our analysis gave the following results: moisture, 16·85 per cent.; fat, 76·42 per cent.; salt, 4·96 per cent.; and curd, 1·77 per cent. The presence of curd shows that milk has been used in its preparation. The melting point and other tests gave normal results for margarine.

PARAGANGLIN (VASSALE).

(BURROUGHS, BURRIDGES AND CO., 12 AND 16, COLEMAN-STREET, LONDON, E.C.)

Paraganglin is described as an extract of the medullary substance of the suprarenal capsules of the calf. It is claimed that it contains the vaso-constrictor principle in larger quantities than adrenalin, whilst there are present in addition diastatic principles and lecithin. Employed in doses of from five to ten drops at a time after or between meals it is regarded as of value in gastro-intestinal atony and is said rapidly to restore tone generally to the stomach and intestines. It is not claimed for paraganglin that it is an extract of the entire gland, as in the case of adrenalin, but that it is an extract of the medullary substance alone. We had no difficulty in recognising the presence of phosphorus in organic association.

DENTIFRICIUM.

(BARTON BROTHERS, 77, KING'S-ROAD, BRIGHTON.)

The merit of this preparation is its simplicity of composition, the ingredients being effectual for cleansing purposes and yet innocuous. After all, one of the best cleansing agents for the teeth is pure soap, which is the basis of this fluid preparation. In addition it is pleasantly aromatic. It is quite free from harmful or irritating substances whilst it is a satisfactory detergent for the teeth.

TWILIGHT TOILET POWDER.

(D. HUNTER, 5, NELSON-STREET, EDINBURGH.)

The composition of this powder is easily ascertained on analysis. It consists of an inert and impalpable powder mixed with a certain proportion of a mild but effectual antiseptic. The preparation is exceedingly smooth to the feel and it is free from any constituents that could do harm to the skin.

Looking Back.

FROM

THE LANCET, *SATURDAY*, SEPT. 9, 1826.

We do not know if we have formed an erroneous opinion, but it strikes us that professed dentists have paid but little attention to the anatomical peculiarities of the teeth, that the instruments they employ for extracting teeth, though often ingenious as applications of mechanic principle, have seldom possessed the peculiar fitness to the various species of these gomphoses, and again to each of a species, an anatomist might desire. Something of this sort, however, has been done by Mr. FAY, an American gentleman, settled in this town, in the construction of his forceps, of which we shall give some account on a future occasion; at present we proceed to the works of Messrs. KOECKER and DE LA FONS.[1] ..... We cannot follow Mr. Koecker in the various sections and chapters which are devoted to the diseases and treatment of the teeth. His plans are generally simple and judicious. Such teeth as are wholly dead are to be removed, and the arts of the dentist, such as stopping, cutting, and filing, reserved for the remainder. Fangs and stumps, which the forceps cannot extract, are removed by the "*levier pyramidal*" of Mr. L. Forgue. The author disapproves of the punch, and we think very justly, and of the key instrument, which effects the removal of teeth at an angle of 90 deg. or so, in which, we think, he is too liberally censorious. It is often an useful instrument. He seems to think the method of perpendicular extraction is wrong, or more painful than the angular, and here also we are dissenters; but, upon the whole, the work is an useful epitome of the dentist's art, and of the prophylactic and remedial treatment of the teeth. The "patent instrument" of M. de la Fons cannot be understood without a reference to the plates at the end of his volume. His "patent method" of fixing teeth consists "in carrying the fastenings of artificial teeth to the hinder parts of the jaw, and fixing them upon the strong-rooted double teeth," to which we can see no objection, it being perfectly natural that he should fix his supports on "those teeth that are best calculated to hold them."

A workman belonging to one of the northern settlements of Upper Canada, was suddenly missed; he had been observed to go toward a neighbouring forest, and was never afterwards seen, although diligent search was made for him for many miles. About twenty years after, some woodmen discovered portions of a human skeleton, and having heard of the loss of their neighbour, took some of the fragments to the deceased's friends. The friends were anxious to obtain the opinion of some anatomists respecting the age of the bones, and on account of its greater portability, the lower jaw, from which the teeth had all fallen out, was selected for the inspection of the persons to be consulted. The opinions of the transatlantic dissectors were so contradictory, that a relative of the deceased coming to England, was requested to show the said jaw bone to some of our teachers of anatomy and surgery. This bone has been handed about town for some time past, and is now in our possession. It has been in the hands of men who have been teachers of anatomy and surgery in this town for very many years, and who now rank high in public estimation. Some said that it was the bone of a man, some of a woman; some that it was 90 years old, some 80, 70, 60, and only one ventured to go below 50 years; that person said 10 or 12, which is nearly double the real age, as is easily shown by removing the anterior plate of the jaw. The permanent teeth are seen snugly cased in their new sockets; not one has appeared above the level of the alveolar process, consequently the individual was *not more than seven years and a half old!!* So little is the progressive development of structure studied in this country!

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[1] Excerpts from reviews of (1) *Principles of Dental Surgery, exhibiting a new method of treating the diseases of the Teeth and Gums, &c.* By LEONARD KOECKER, Surgeon Dentist, Doctor in Medicine and Surgery. 8vo, pp. 445. London, 1826. Underwoods; and (2) *A description of a new patent Instrument for extracting Teeth; also of a patent method of fixing Artificial Teeth.* By J. P. DE LA FONS, Surgeon Dentist. 8vo, pp. 76. London, 1826. Hatchard and Son; Sams; Highley.

New Inventions.

AN IMPROVED HAGEDORN'S NEEDLE HOLDER.

ONE drawback which may be urged against Hagedorn's needle holder is that a somewhat uncomfortable movement of the little finger is necessary to unlock it. I have therefore requested Messrs. Arnold and Sons, 31, West Smithfield, E.C., to construct a Hagedorn with a Macphail's catch. This renders the unlocking a comfortable process. The holder as thus modified is shown in the accompanying illustration.

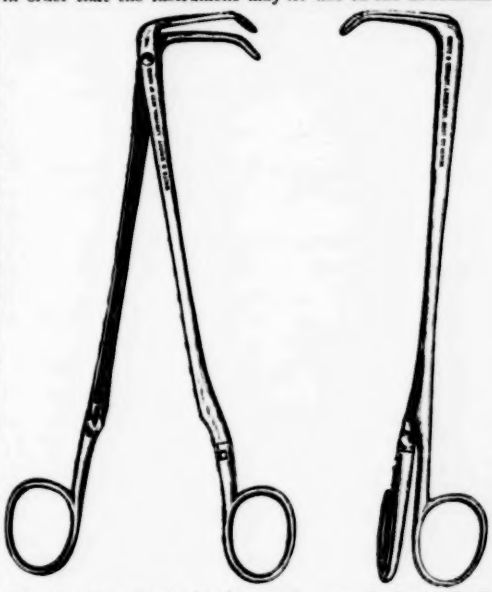
CECIL H. LEAF.
Wimpole-street, W.

THE ATKINS NEW CANDLE CARBON FILTER.

THIS filter is constructed on the principle of the porous porcelain candle drip-filter of the Chamberland - Pasteur type. It consists of a reservoir into which the filtering chamber fits provided with three carbon candles. The advantage of such an arrangement is that in addition to rendering water sterile the action of carbon is utilised to remove the organic matter. We placed the filter under some rather severe trials and except that the rate of filtration is decidedly slow the results were quite satisfactory. The rate of filtration of ordinary tap water was nearly three pints per hour, but this rate was considerably reduced when turbid water was put into the filter. In all cases, however, a perfectly clear filtrate was obtained. Ultramarine was effectually filtered out and, as is well known, this substance is difficult to remove from water. Water coloured with caramel came through colourless and clear. The carbon candles are made of dense material and are comparatively thick in the wall which accounts for the small filtering capacity. The filter is manufactured by the Atkins Filter Engineering and Water Softening Co., Limited, of 71, Southwark-bridge-road, London, S.E.

COMBINED PERITONEUM FORCEPS AND WOUND RETRACTOR.

THESE forceps, made according to my instructions by Messrs. White and Wright, 93, Renshaw-street, Liverpool, are for use during any abdominal operation. As the peritoneum is cut through the edges are seized by one, two, or more pairs of forceps on each side of the wound. The special advantages which they possess are: 1. Since the shanks are at right angles to the blades the former do not get in the way of the operator by sticking up or falling across the wound, as usually happens with Spencer Wells or other forceps. 2. The whole instrument is so shaped that it acts as an efficient wound retractor, being also retained in position by the grip which it has on the peritoneum. Further, the lower finger-hole is made so that it can be rotated to a right angle with the other in order that the instrument may lie flat on the abdominal

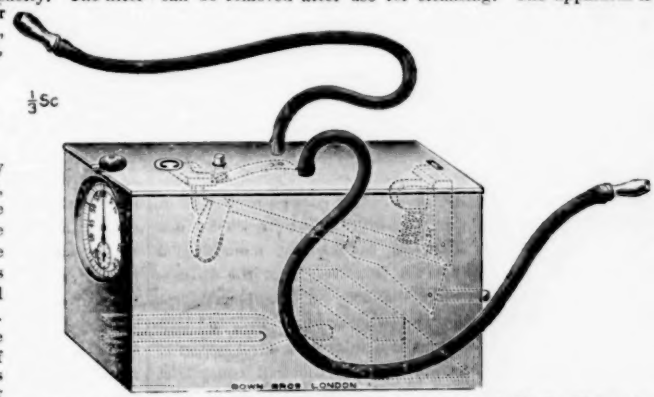


wall. The length of the forceps is seven inches and all the joints are of the "take-off" variety.

Liverpool. W. BLAIR BELL, M.D. Lond., M.R.C.S. Eng.

AN AUDIOMETER FOR NOTING THE AUDITORY APPRECIATION IN CASES OF DEAFNESS AND OTHER DISEASES OF THE EAR.

THE accompanying illustration represents an instrument which I have designed as an aid in the investigation and diagnosis of cases of deafness. The working parts are contained in a box provided with two ear-pieces attached to it by flexible tubes. The contents of the box include one or more tuning forks, shown by the dotted lines, and as the force which sets the fork in action is always the same, and as the sound is heard by the operator and the patient under the same conditions and at the same time, an exact record of the time of appreciation can be kept which is a valuable reference in the future treatment of the case, or for noting the effect produced on audition by particular treatment, such as inflation or paracentesis. The C fork is the ordinary test. The terminals are of glass and can be removed after use for cleansing. The apparatus is



made by Messrs. Down Brothers, Limited, 21, St. Thomas's-street, London, S.E.

ST. GEO. CAULFEILD REID, M.R.C.S. Eng
Thornton Heath, Surrey.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 10, 1904.

Human Piroplasmosis.

THE article entitled "Human Piroplasmosis" by Major C. DONOVAN, I.M.S., published in another column, directs renewed attention to the "new body" as it is termed by those specially interested in tropical pathology. It is usually designated the Leishman-Donovan body and under that name Major W. B. LEISHMAN, R.A.M.C., described the body and the clinical conditions associated with its presence in human beings at the Oxford meeting of the British Medical Association on July 29th, 1904. The name piroplasma Donovani has been assigned to the parasite by LAVERAN and MESNIL, to whom Major DONOVAN sent specimens for examination. The "new body" has therefore had a dual baptism, being known as the Leishman-Donovan body on the one hand and as the piroplasma Donovani on the other. The advantage of the latter designation is that it conveys some information in regard to the genus to which this sporozoon parasite belongs, whilst the former leaves the matter wholly undetermined. That the new body is a piroplasma seems, however, open to question; the weight of evidence tends to the belief that the body is a form of trypanosoma and so far has the matter advanced that Captain LEONARD ROGERS, I.M.S., announces that he has seen the Leishman-Donovan body develop into trypanosomes. This has, however, to be substantiated and until then we must withhold any pronouncement in favour of the parasite being either piroplasma or trypanosoma. It may be that the new body belongs to neither, but careful investigations to ascertain which, if either, is the correct view will no doubt help to solve the problem. It has even been thought that the Leishman-Donovan body may be the resting stage of the malaria parasite and whilst there is no direct evidence in support of this doctrine there is something to be said in favour of such a supposition.

Our knowledge of the genus piroplasma as a parasite has been chiefly derived from the investigations made in connexion with Texas fever in cattle. SMITH and KILBORNE demonstrated that cattle in Texas were afflicted by a parasite—the piroplasma bigeminum—conveyed to them by the bite of a tick—the boöphilus bovis. By the tick the parasite is transferred from one animal to another. The tick is, however, more than a mere mechanical agent in the transference of the disease. It is believed that within the body of the female tick the parasite is in some way conveyed to the ova, and that the young insect as soon as it attains full development is already a source of infection to any cattle that it may bite. In what way the new body, the piroplasma Donovani—i.e., the Leishman-Donovan body—is conveyed to human beings is not known, but when once the zoology of the parasite is definitely settled the further investigation of its definite host should present few difficulties. But whether the new body is a piroplasma or a trypanosoma or a resting-stage of the malaria parasite we cannot, after reading Major DONOVAN'S article, agree to lay aside Major LEISHMAN'S name in connexion with this important discovery. Major LEISHMAN no doubt found the parasite in November, 1900, but did not publish his discovery until May 30th, 1903, in the *British Medical Journal*. Major DONOVAN, on April 23rd, 1903, found the bodies in smears of the spleen taken post mortem, but did not publish his results at that time. It was only after receiving the *British Medical Journal* on June 15th, 1903, that Major DONOVAN sought for and found the parasite described by Major LEISHMAN in the spleen during life on June 17th, 1903. It would therefore seem that Major LEISHMAN is entitled to have his name associated with this parasite, whether it be a trypanosoma or a piroplasma. Colonel DAVID BRUCE, R.A.M.C., at the meeting of the British Medical Association considered that the parasite should be known as Leishman's and not as the Leishman-Donovan body or as the Cunningham-Leishman-Donovan body as some style it. That Major DONOVAN'S name is solely associated with the parasite is due to LAVERAN and MESNIL and we are sure that so ardent and scientific an observer as Major DONOVAN would be the last to deny his indebtedness to Major LEISHMAN.

Whatever name is bestowed upon the parasite there can be no doubt about the importance of the discovery. The numerous cases of malarial cachexia, the fatal malady of kala-azar in Assam, and many of the irregular and indefinite tropical fevers upon which quinine has no beneficial effect have suddenly received an explanation which revolutionises diagnosis in tropical medicine. In our schools of tropical medicine the malaria parasite has hitherto engaged the attention of our teachers well-nigh to the exclusion of other subjects, but the widespread disease due to the Leishman-Donovan body which exists in many countries along with malaria, must in future form an important subject in our laboratories and clinical lectures. It is well-nigh astounding how quickly evidence grows around any new discovery nowadays in tropical pathology. In a week or two, or in a month or two at most, abundant evidence in connexion with any recent discovery in tropical diseases is forthcoming from many quarters of the globe and by many observers. In comparison to discoveries made in Europe appertaining to pathological subjects tropical pathology advances at a rate which is sometimes dangerous it may be, yet it advances and attains confirmation or negation within an incredibly short space of time. The reason probably lies in the fact that most medical practitioners in the tropics are investigators and careful observers as well as practitioners. The microscope is ever at hand as part of their daily routine of practice. They observe for themselves and in the majority of instances a reluctance to publish their observations in case they are incorrect or lest their technique or methods be wrong prevents their names being known. The moment, therefore, that some one more bold or more certain of his methods declares his observations these hesitants are ready with floods of evidence for or against the new announcement, and the

discovery attains a position in scientific nomenclature which is rapid and which sometimes may become even dangerously so. Nevertheless, we are pleased to know that this spirit exists amongst the medical pioneers of our profession and we can congratulate ourselves that our countrymen have, in the field of tropical medicine at any rate, been able more than to hold their own in investigation, in originality of thought, and in the practical treatment of disease.

Suicide while Temporarily Insane.

MR. R. HENSLOWE WELLINGTON, deputy coroner for Westminster and the South-Western district of London, recently read an exhaustive paper before the Medico-Legal Society on the subject of the verdict usually returned at inquests upon the bodies of persons who have died by their own act. In the paper, which has been since published as a pamphlet, he discussed the terms commonly used from an etymological point of view and condemned their universal application in the absence of evidence of mental unsoundness. With regard to the derivation and meaning of the word "suicide" we find it a little difficult to follow Mr. WELLINGTON, but with his objection to the perfunctory findings of coroners' juries, who have nothing to guide them but the mere fact that a man has killed himself, it is more easy to agree. Mr. WELLINGTON traces the first admission of the word "suicide" into the English language, finds that in legal text-books it was accepted as a synonym for *felo de se*, and draws the conclusion that legally, at all events, it should have no other meaning, adding as a result of this that because *felo de se*, a felony committed upon himself, is not at law possible in the case of an irresponsible person, therefore "suicide" by an insane person must be an equally incorrect expression. If, however, he is right and if "suicide" was thus exclusively used in law books more than a century ago, it by no means follows that a wider use of the term may not be perfectly good English, or at least good enough for ordinary and even well-educated persons to use. He objects that "suicide" is not the descendant of any true Latin word, and quotes TRENCH who, no doubt rightly, makes it analogous to fratricide and other similar terms in everyday use. "Suicide" is not truly derived upon strict lines, but it is a useful and intelligible coined word comparing favourably with many in everyday use such as "parasol" and "telegram." We would question whether it would be convenient to condemn the use of "suicide" as a term meaning "self-killing." Mr. WELLINGTON, however, goes further and says that it is a double error to say that an insane person "*committed* suicide," because Dr. JOHNSON ascribes to "commit" the meaning "to perpetrate—to do a fault—to be guilty of a crime." Here, again, it would be inconvenient to be restricted to the use of words as Mr. WELLINGTON would have it, and to be obliged to remember that a lunatic always "does" an act but cannot "commit" it. The Trial of Lunatics Act, 1883, indeed supports Mr. WELLINGTON to some extent by using the verb "to do," but the same Act makes a worse blunder than speaking of the "commission" of a crime by a lunatic where it says, with regard to the finding to be brought in, "the jury shall return a special verdict to the effect that the accused was guilty of the act or omission charged against him, but was insane as aforesaid at the time when he did the act or made the omission." There is obvious unfitness in the use of a word importing guilt when other words following immediately afterwards render the "guilty" person blameless. In short, if persons of unsound mind cannot etymologically be "guilty" or "commit suicide" the use of these words in the absence of better ones is convenient, is sanctioned by usage, and can hardly be said to introduce any confusion of ideas in practice.

The finding of "temporary insanity" at inquests is another matter. This verdict is delivered in almost all cases of suicide and is in many founded only upon evidence that the deceased was worried about business matters, or that he had been crossed in love, or that he had some other cause for depression, or that he seemed depressed without apparent reason, and at times it has little or nothing to support it beyond the fact that he took his own life. If these verdicts formed an important item in statistics of insanity they would be open to considerable criticism. As it is, to some extent they cast upon relatives and descendants the taint of "insanity in the family," and it is clearly unjust that they should do so in some cases. The principal reasons which rendered them of value in the past to the relatives of the deceased have for many years ceased to exist. There is no longer forfeiture for felony, and the body of the deceased against whom a verdict of *felo de se* is recorded is not impaled or buried in the highway. A reason, however, for the verdict being desired still remains in the fact that the rites of burial as performed in other cases over dead bodies by ministers of the Church of England and of the Church of Rome are withheld in cases where it is known that the deceased deliberately took his own life. The additional distress which this deprivation would cause to survivors already mourning the death is avoided by the recording of a verdict which acquits the deceased of crime and which does so in most instances with justice. A living man is not punished as a criminal who does not know the nature and quality of the act which he commits, or who, if he knows these, does not know that he is doing what is wrong, and these phrases are usually interpreted to include those who through defect of reason are not capable of sanely appreciating their acts as others are. The impulse to self-destruction as a means of escape from unhappiness, real or imaginary, is of a somewhat different character from the impulses which incite to other crimes and is likely to occur more frequently and to be resisted less easily. Moreover, in many cases of suicide, to use the term in the general sense objected to by Mr. WELLINGTON, full investigation, such as is accorded where an accused person is alive, would bring to light evidence which now is often absent. The man, however, is dead and consequently beyond the reach of punishment. Prolonged inquiry might cause poignant distress to relatives and expense to the community without substantial advantage in compensation. The verdict of the coroner's jury would be better founded on fact in some cases; in others it would be still more contrary to the evidence than it is already, owing to sympathies and prejudices which would not easily be eradicated. In the existing circumstances coroners can, and should, endeavour

to guide juries to abstain from finding verdicts of temporary insanity where the act was apparently that of a sane man performed deliberately. Any alteration in the law, however, which would make of inquests satisfactory and authoritative investigations into the mental condition of the deceased would impose functions upon coroners' juries which they would be quite incapable of performing.

Special Hospitals and Departments.

WE are invited by an esteemed correspondent to express an opinion as to whether, in relation to insufficient provision in any locality for the treatment of any special form of disease, or of the diseases peculiar to any organ or group of organs, it is generally more advantageous to establish a special hospital, or to establish special wards or a special department in a general hospital already existing. We think it is manifest that the reply must greatly depend upon the circumstances of each individual case and also that the truth concerning these circumstances may not always be readily and certainly discoverable. It may of course be assumed, as a general proposition, that the amount and kind of hospital accommodation in any place should bear some definite proportion, not only to the magnitude of the population to be served, but also to the nature of the diseases incidental to their occupations. In a district in which married women are largely employed in factories and are constantly called upon to return to work soon after childbearing it would obviously be necessary to make larger provision for uterine maladies and for the rachitic diseases of children than would be wanted in places more favourably circumstanced in these respects and hence it is hardly possible to make any definite statement with regard to the number of beds which should be provided for a given number of possible applicants. But the staff of a general hospital or the members of its governing committee would always know whether the pressure upon its beds was of such a kind as to indicate inadequacy to satisfy genuine requirements or to call for the premature discharge of patients in occupancy in order to afford admission to urgent cases from without. The medical practitioners of the surrounding district, moreover, would not only be well informed upon this point but would also be likely to know, sometimes even better than the staff of the hospital, whether any particular class of disease was excluded by circumstances or whether cases were not taken to the hospital with a frequency proportionate to their occurrence as a consequence of want of knowledge that sufferers from the disease would be received and adequately treated there. The staff, likely to be composed of the leading physicians and surgeons of the locality, might know only of what was brought to them, while the surrounding general practitioners, who would know of whatever was occurring, might be better able to estimate the wants of the community and to pronounce upon the adequacy or inadequacy of the manner in which they were supplied.

By the aid of such information, and if we could eliminate from the question all consideration of the infirmities of human nature, there would not seem to be much difficulty in determining whether the hospital accommodation of a particular town was or was not adequate to the real wants of its contained and neighbouring population, or in determining, in the latter case, whether the inadequacy was specially conspicuous in relation to some one acknowledged department of the healing art, such as gynæcology or ophthalmology. If such inadequacy were shown there would be obvious economy in the special department as opposed to the special hospital. The cost of an annexe would, as a rule, be less than that of a new building and the establishment expenses would in many respects remain the same. The matron, the secretary, and the clerks of the original institution would also, as a rule, require no addition to their forces and the prestige of an established charity would in some circumstances be helpful to the extension. On the other hand, the situation of the existing hospital might be an inconvenient one or there might be no space on which a sufficient addition to its buildings could be erected. But, human nature being what it is and human beings, even philanthropists, being creatures actuated by mixed motives it is not unusual for considerations quite unconnected with economy to come into prominence and to exercise great influence over local counsels.

It will perhaps generally happen that a proposal to open a new special hospital originates with a practitioner not in possession of hospital office but anxious for its opportunities and confident in his own powers to do justice to them. The proposal will often be opposed as being at least "unnecessary" by the staffs of existing institutions. In such circumstances, and if the evidence brought forward were sufficient to secure the necessary pecuniary support, it is almost manifest that the addition of a special department to an existing general hospital might not fully meet the requirements of the case. If the pre-existing staff were called upon to work the new department they would at least be under some temptation to justify their declared opinion and to get through their new duties in a manner which might be described as perfunctory. If the innovator were himself appointed he might be seriously hampered by colleagues to whom he was unwelcome and in either of these cases the new departure would scarcely have fair play. If, on the other hand, a special hospital were established its supporters would be sustained by a certain amount of enthusiasm and those responsible for the management would one and all feel it incumbent upon them to do their very best to justify the course which they had pursued. A new special hospital which was shown by events to be superfluous would be likely soon to languish. On the whole, then, we think that, in the presence of a real and acknowledged local want, and in a provincial town in which there is no question of teaching to be considered, a special hospital is likely, even if less economical, to be more successful and more useful than a special department. If the latter were decided upon the conditions most favourable, if not essential to its usefulness, would be that it should be worked by a new officer or officers, and with the cordial coöperation and good wishes of those previously in possession.

Our reply has been necessarily indefinite as it must depend on the circumstances of vastly varying cases. Our leaning

to the foundation of special hospitals in certain of these cases must not be misintepreted. As all our readers know, we are aware of the evils of over-specialisation, whether manifested in the work of men or institutions, but where a proven want of the community is not in a fair way to be met by the general hospital the creation of a special hospital is justified.

Annotations.

"Ne quid nimis."

THE CARE OF IDIOTS AND IMBECILES.

ON the recommendation of the Home Secretary a Royal Commission has just been appointed to consider the existing methods of dealing with such mentally defective persons as are usually regarded as being outside the scope of the Lunacy Acts. The Act of 1890 includes within the definitions of a lunatic "an idiot or person of unsound mind," but hesitation is felt in using the machinery of the Act to cope with idiocy, imbecility, or the minor degrees of mental derangement resulting from epilepsy, and as yet there is no efficient substitute for that machinery. It is, doubtless, with the object of remedying this defect that assistance has been invited from the members of the Commission, whose names are as follows: The Marquis of Bath (chairman), Mr. William Patrick Byrne, C.B. (of the Home Office), Mr. Charles Hobhouse, M.P., Dr. Frederick Needham (one of the Commissioners in Lunacy), Mr. Henry David Greene, K.C., M.P., Mr. Charles E. H. Chadwyck-Healey, K.C., the Rev. Harold Nelson Burden, Mr. Willoughby H. Dickinson (a former chairman of the London County Council), Mr. Charles Stewart Loch (secretary of the Charity Organisation Society), and Mrs. Pinsent. We should have expected to find in a body of persons selected to consider a question affecting so largely the public health as does that of the treatment of mental disorders a more extensive representation of the medical profession, but we do not wish to cavil at the composition of the Commission and will content ourselves with hoping that its labours may yield more valuable fruits than usually result from the efforts of such bodies. The matters which should more particularly engage the attention of the Commission are the kind and the degree of the restraint of personal liberty which should be exercised and the modes of effecting the necessary interference. That there should be outside the purview of the Lunacy Acts so large a number of the mentally defective as to call for the appointment of a Royal Commission to investigate the circumstances is proof of the urgent need for such further legislation as would provide boards of guardians and the other public bodies upon whom falls the responsibility of looking after these cases with the powers essential to the proper performance of the task. The allied problem of turning to account the misdirected energies of our vagrant population will probably have some light thrown upon it by the evidence given before the Commission and the modern system of encouraging the survival of the unfit may receive some useful criticism.

"OPTOLOGY: A NEW PROFESSION."

OUR friends the so-called "optologists" are not letting the grass grow under their feet, and are rapidly developing their pretended profession into one of the most rampant forms of unprincipled quackery. We have before us an illustrated pamphlet recently issued by one of the firms engaged in the disreputable business. It not only contains portraits of the proprietors, but also views of the rooms in which the "sight testing" is conducted, while the pictorial pages are accompanied by others containing letter-press in which the claims of the advertisers are set forth. In one of the pictures we have a view of a young man being examined ophthalmoscopically, presumably with a view to estimating his refraction, and we have on several pages the distinctly false assertion that "spectacles concern the *optical part of the eye only*, and have nothing to do with disease." It must always be an open question whether impostors should be exposed or should be suffered to expose themselves, but in this instance we think the medical profession would be well advised in using whatever opportunities may offer themselves of explaining the true character of very dangerous false pretences and of warning their patients against the devices of persons whose announcements show them to be as devoid of scruples as of knowledge. The Company of Spectacle Makers in letting loose this flood of quackery have not only discredited themselves but have also inflicted a great and grievous injury upon the public.

PRISON CLEANLINESS.

IN THE LANCET of July 23rd, p. 235, we published under this heading a series of statements from a correspondent who had recently served a term of one month in one of His Majesty's prisons together with a brief comment by ourselves, which, we may explain, was not intended to endorse our correspondent's words but rather to point out the uses of publicity in such cases. The matter was brought to the notice of the Prison Commissioners whom we supplied with the name of the prison in question. An exhaustive inquiry was made and the papers giving the result have been placed at our disposal for inspection by the Home Office. The governor of the prison answered our correspondent's statements in detail, the effect being generally a contradiction. The first statement of our correspondent was that the cell urinal had to be uncovered all day. The rule is that chamber-covers are not required to be off the chambers except at the time of the governor's inspection. Our correspondent implied that a prisoner might clean his table-ware with a rag which a former prisoner had used for his chamber or his wash-bowl. This, says the governor, is impossible. As regards the cleaning, rags are issued fortnightly and the old ones are collected and burned, but should a prisoner use his supply before the fortnight is up he can ask for more. As regards the purpose for which these rags are used, the only articles which a prisoner has to clean for himself are his mug and plate; all chambers, water-jugs, and wash-bowls are cleansed at the sinks in the corridors and food tins are cleansed in the kitchen. Tooth-brushes, which our correspondent said were unknown, "may be had for the asking, although they are not served out as a routine for the authorities found that they were very rarely used." Hair-brushes, which our correspondent described as "filthy" and adding another horror to a change of cell, are, says the governor, issued clean to every prisoner on admission and are washed once a month. The documentary evidence at the Home Office also shows that in no case does one bucket of water serve for more than one cell, that plenty of water is supplied, and that soap may be had for the asking; while a further suggestion that filth is passed by prisoners from cell to cell is contradicted by the governor who says that such acts would be detected and punished. As regards baths, officers are strictly enjoined to see that a prisoner does wash himself and the average time taken at the prison in question is, we are informed, 15 minutes. This is not much time, but does not justify our correspondent's description of a prison bath as "a mere farce." The complaint that it was not permissible to keep the water tin covered is answered specifically by the governor, who says that the

plate may be kept on as a cover during the whole day, except during the time of the governor's inspection. In reference to the treatment of patients with diarrhœa we are informed that a prisoner confined to cells can go to the water-closet whenever he likes except during patrol hours. During these hours he must use his chamber, but if he is ill he can ring his bell and will then receive attention. We were informed that if his chamber was full of fæces he would be considered "ill." Underlinen is washed in accordance with the standing orders, so that the statement of our correspondent that he received his own linen back upon discharge unwashed is challenged. Only one real cause of complaint was allowed by the governor to have been made; we quote his own words: "The rule has been that a prisoner on being transferred to another cell only takes with him what he brings with him from the reception-room. So he did not take his brush and rags with him. I have now ordered that all brushes shall be taken into the reception-room on a cell being vacated, so that the prisoner will in future take his brush and rags with him." It will be seen that the rules of the prison are designed to obviate nearly all the abuses of which our correspondent complained.

THE DETECTION OF ARSENIC IN THE DRUGS OF THE BRITISH PHARMACOPŒIA.

ON the suggestion of the Royal Commission on Arsenical Poisoning to the General Medical Council that the sufficiency of the tests prescribed in the British Pharmacopœia for the detection of arsenic in drugs should be investigated, the pharmacopœia committee of the council instructed Professor W. R. Dunston to commence an experimental inquiry in the direction indicated. The work was carried out in the laboratories of the Imperial Institute and the results so far gained, together with certain recommendations, have been published in the form of a report, Mr. H. H. Robinson, M.A., F.C.S., collaborating with Professor Dunstan. These gentlemen, whilst admitting the Marsh-Berzelius test to be by far the most delicate method for detecting minute quantities of arsenic, pointed out that it was excluded by the stipulations desired by the committee that the tests should be such as could readily be applied by a properly qualified pharmacist without complicated apparatus. They therefore adopted the test which depends upon the production by arseniuretted hydrogen of a yellow stain on paper containing mercuric chloride. This test was fully described as the Gutzeit test by THE LANCET Analytical Commission On the Scope of Arsenical Contamination traceable to Impure Sulphuric Acid, in THE LANCET of Jan. 5th, 1901, p. 54, when it was recorded as very satisfactory for qualitative purposes and to some extent for quantitative purposes also providing that certain precautions were taken. The stain decided on as the standard for comparison and as showing that a drug contains an inadmissible amount of arsenic is that given by 0·012 milligramme of the element. A scale of standard stains can be easily prepared representing 0·004, 0·008, 0·012, and 0·016 milligramme of arsenic respectively. These are equivalent to 1, 2, 3, and 4 parts per million when compared with the stain from 4 grammes of material, and thus an idea of the amount of impurity present can be obtained. Certain drugs must undergo a preliminary treatment, which is described, before being submitted to the test. For the majority of drugs which are administered in small doses a limit of three parts per metre of arsenical impurity is suggested. This is equivalent to $\frac{1}{4}$th grain of white arsenic in one pound, so that half a pound of a drug will contain less than a small medicinal dose ($\frac{1}{8}$th of a grain) and two pounds of the drug will contain less than a large medicinal dose ($\frac{1}{15}$th grain). Stricter limits are placed on sulphuric acid, hydrochloric acid, nitric acid, and ammonia, since these are used in the preparation of many other substances and the three acids in particular are the source from which arsenical contamination usually arises. The limit for iron preparations is 0·03 per cent. of arsenic. The report concludes with a section on the alterations proposed in the monographs of the British Pharmacopœia of 1898 which refer to arsenical impurity. Similar alterations are proposed in the descriptions of the substances employed in the tests. This investigation is of obvious importance and it is desirable that the recommendations for the future test of the British Pharmacopœia should be adopted as soon as the investigation, which is still in progress, is concluded.

THE LIVE RAIL.

THE live rail threatens to be the new danger connected with electrical traffic and it is desirable that pressure should be brought to bear upon railway companies and others to make the system as safe as possible to the public. Already several fatal accidents have been reported and the Board of Trade has dealt with them with admirable promptitude. So far the electrifying of railways existing in London has not attained great dimensions. The underground railway will be the first big scheme realised and there is little doubt that other short local railways will sooner or later follow suit. Underground railways, however, are not so much open to the risks of trespassing as overground lines are. It is hardly possible to expect that the railway companies will be able to guard the live rail over the whole course but it is evident that the live rail ought to be shielded where there is likely to be foot traffic. In a fatal case which occurred on the North-Eastern Railway the deceased was employed at work in a granary belonging to the company and it appears that he was crossing from the granary to a goods station on the other side of the line when he stumbled and fell. His head came into contact with the live rail and his face with some point rods passing under the rails at that spot. The electric current from the live rail passed, consequently, through his head and caused his death. The medical evidence was to the effect that the deceased died from the action of the electric current on the medulla oblongata. Lieutenant-Colonel von Donop, in his report, considers that, this spot being one at which the company's servants habitually cross the line, it is essential that precautions should be taken to guard them from danger arising from the live rail. It appears that close to the live rail where the deceased met his death was the main line which was guarded. As a result of the accident the company is in consultation with its servants as to what other portions of the electrified line call for similar precautions. In another case on the same company's line a boy tried to jump the first live rail of the up line but in doing so he tripped and fell across the two live rails. Lieutenant-Colonel von Donop is not prepared at the present time to recommend the Board of Trade to call upon railway companies to guard their live rails continuously, but at all stations, sidings, signal-boxes, and such places, where shunters, porters, signalmen, and other employees of the company may have to cross the line in the execution of their duties, protection, he adds, should certainly be provided and the public should also be efficiently protected at stations and level crossings. In another case which occurred on the Lancashire and Yorkshire Railway the accident was entirely due to the men being trespassers. One died but another was restored by artificial respiration. Major E. Druitt comes to much the same conclusions as Lieutenant-Colonel von Donop in regard to the special precautions that should be taken for the protection of the men. He adds that so far as experience goes at present it does not appear necessary to provide boarding for the live rail for the whole length of the line in order to protect the men employed in working the traffic. On this line there

are notice boards at all level crossings pointing out the danger to trespassers from the electrification of the line, in addition to "beware of the train" notices. "Electrification" notices are also put upon the side of the line at places where people might be liable to trespass, such as alongside golf courses. It is to be hoped that the public will be efficiently warned by these sad accidents and brought to realise the very real danger that lies in the live rail.

THE ACTION OF TOXINS ON THE SPINAL CORD IN THE STAGES PRECEDING POTT'S DISEASE.

THERE are now on record cases showing beyond doubt that the spinal cord may be affected by tuberculosis without the presence in it of giant cells, miliary tubercles, or even tubercle bacilli. Toxæmic degenerations of the cord are known to occur without the actual presence of the toxin-producing microbes *in situ*. In the *Journal of Nervous and Mental Disease* for August, Dr. Alfred Gordon of Jefferson Medical College, Philadelphia, records an interesting case. Besides the uncommon pathological findings, the cord was entirely free in the spinal canal and no distinct adhesions of the meninges were noticeable. The case was really one of Pott's disease of the spine in which the morbid processes had not as yet spread to and involved the meninges and cord substance but in which the action of toxins carried into the spinal cord by the lymph stream was the efficient cause of the lesions to be described. No vertebral or pachymeningeal compression existed. The case was that of a man, aged 53 years, who had had syphilis 15 years previously to his admission to hospital. In August, 1902, while at work as a ship's steward he was exposed for a long time to dampness, after which he suffered intense pain in the lumbar region. He improved temporarily under treatment but after a few weeks grew worse. On admission to hospital on Jan. 19th, 1903, there was severe pain in the epigastrium and umbilical region extending to the lower extremities, which have since then become weak and numb. He developed a complete flaccid paraplegia with loss of knee-jerk on the left side and exaggeration of it on the right side. There was no ankle-clonus but the Babinski reflex was present on the left side. Sensory disturbances and areas of anæsthesia to pain and to thermal stimuli appeared in both legs and after some weeks trophic disturbances showed themselves in the form of bedsore and deformed brittle nails. The abdomen below the umbilicus presented almost complete loss of all sensations, the perineal area alone being unaffected. The sphincters of the bladder and rectum were involved and incontinence of urine and fæces followed. The symptoms grew gradually worse and muscular atrophy of the limbs set in. On the back a prominence was apparent in the region of the spines of the ninth and tenth dorsal vertebræ. The patient's health continued to fail, bronchitis set in, and examination of the sputum showed the presence of tubercle bacilli. Various irregularly distributed paralyses of muscles occurred in both the upper and lower limbs and the face, dysphagia followed, and he died on April 14th, 1903, after a three months' stay in hospital. The necropsy revealed the following condition of affairs. There were caries and softening of the bodies of the ninth, tenth, and eleventh dorsal vertebræ. Angulation was not present and the lumen of the spinal canal, though slightly encroached on by the affected vertebræ, was not sufficiently interfered with to cause any appreciable compression of the cord. The brain was œdematous. The lungs were emphysematous, and the middle lobe of the right lung was the seat of a caseous tuberculous patch two inches in diameter. The liver was congested and showed signs of fatty infiltration. A large area of softening appeared in the centre, or vermis, of the cerebellum. In the spinal cord the nerve cells showed pronounced changes of a destructive and degenerative character, especially in the mid-thoracic region. The spinal ganglia showed an extensive degree of atrophy of the ganglion cells and the presence of a great number of amyloid bodies. In the upper thoracic cord were degenerations limited to Goll columns and the adjacent border of Burdach's column. At the ninth segment there was widespread degeneration of the whole posterior and part of the lateral columns. Lissauer's tract showed considerable degeneration. Similar degenerations occurred in the tenth and eleventh segments, the changes appearing to have their point of departure in the tenth and eleventh thoracic segments. The tract lesions above and below these points are, Dr. Gordon points out, in accordance with our knowledge of the direction of the sensory and motor tracts. Below the eleventh segment there was in addition a linear degenerated area corresponding somewhat to Schultze's column or the "comma" tract. The absence of any mechanical pressure on the cord in the present case (unlike the vast majority of cases of its kind) raises the question as to how such pronounced pathological changes could be produced in the three segments of the cord. Histologically, says Dr. Gordon, the case resembled the experimental case of tuberculosis by inoculation mentioned by Philippe and Cestan. Dr. Gordon concludes that his case lends support to the view of Homen based on experiments (*Neurologisches Centralblatt*, No. 3, 1904) which show conclusively the disposition of the lymphatic route of injected bacilli and their toxins. The caries of the bones and the inflammation of the meninges adjacent to them were the starting points of a local lymphatic infection of the specially affected area (the ninth, tenth, and eleventh segments) of the spinal cord by toxins carried thither by the lymph stream but without the invasion of tubercle bacilli.

MANCHESTER CHILDREN.

PHYSICAL deterioration is the burden of much of the lament over the condition of a large proportion of our population. It is inaccurate to state that under the conditions of life among the very poor, whether their submergence be due to their fault or their misfortune, it is hopeless to look for even average specimens of the race, but it would be foolishly optimistic to belittle the ill influences of environment upon certain of our young. And where the causes of the vicious environment are hard of removal rapid improvement must not perhaps be looked for, but it is well to remember the numerous agencies at work attempting to counteract the various physical evils from which our people are suffering. In Manchester the Ladies Public Health Society has done and is doing much good in the systematic visitation of babies and the instruction of the women in the matter of feeding and the care of them; in giving instruction in cases of infectious diseases, with special attention to consumptive cases; in the systematic visitation of the houses in the districts taken charge of by the various lady-superintendents; by the distribution of leaflets on sanitary and other matters; and the supplying of lime, whitewash brushes, sanitary powder, and also of carbolic soap to the people in the districts. The first of these duties—instruction as to the care of the children—is, perhaps, the most important and the most needed when we think of the high death-rate among the infants. In Dr. J. Niven's last annual report it is given as varying from 139·34 per 1000 births in North Manchester to 168·27 in the Manchester township. More than half of these deaths—55·22—in the old township, as it is often called, are attributed to the group of wasting diseases, including premature birth, atrophy, marasmus, debility, inanition, and ill-defined conditions, but all except the first telling of improper feeding and want of care. And those who survive carry the

traces of early neglect, for the hooligans of the street-corners are physically unfit for recruits, not meeting even the requirements of the present low standard. Three difficulties are met with by these voluntary workers. Simple ignorance of the mothers, ignorance coupled with scepticism as to the value of the instruction, or, thirdly, the mother may be utterly indifferent to the well-being of her child. But, in spite of all, we are told in the report that since the systematic visitation of babies came into practice the death-rate has been perceptibly lower. And of course all the difficulties met with are intensified too often by the drunkenness of the mothers. Another agency for good, though its means and powers are limited, is that of the Manchester and Salford Country Holidays Fund which, Mr. Horsfall tells us, has during the last 19 years sent nearly 15,000 children into the country for a three weeks' holiday. The result, as a rule, is great improvement under the influence of fresh air, exercise, and good food, which is no doubt encouraging, but three weeks of good hygienic conditions cannot balance 49 weeks of life spent in unhealthy surroundings. It is encouraging to know that Dr. Niven is hopeful as to the prospects of improvement in the physique of the Manchester children, and considers those produced in the city quite as good as those coming in from the outside, and that if they are well fed, properly clad, and properly educated, a considerable number will find their way upward. In this case the "if" covers some very important conditions.

"MAKING UP THE MIND."

THERE are plenty of people of whom it is said that they can never "make up their minds." It is not always realised, however, by the average individual what an elaborate psychological difficulty may have to be overcome before the mind is "made up." The man who lives by the light of reason, who weighs most actions before he embarks upon them and foresees consequences before he makes endeavours, to such a man "making up the mind" is an exercise comparatively easy, because habitual and involving no novel line of mental effort. Such men are, though, the exceptions even among men of science and mathematicians. Most men are more open to human influences whether of a selfish or of an altruistic nature. Consequently it happens that when confronted with a problem of life and when a decision has to be come to as to what course of action shall be pursued men find that the pure light of reason shines only upon a road that is obscured by the conflicting shadows of those who will be variously affected according as action in one or another direction is entered upon. To weigh the claims of all parties concerned, to discern the direction of duty, to realise the influence of purely selfish considerations is often such a task as defeats the average intelligence altogether. It is not seldom that in such circumstances the medical man is the *deus ex machinâ* upon whom the "making up of a mind" devolves. It behoves us all, then, more than most men to realise the mental quandaries in which doubt may land at times even the most sane and most stoical of our patients. Moreover, if such perplexities as are here hinted at may trouble the average intellect their effect upon an ill-balanced or an hysterical individual may be conceived as most disturbing. The generic and much-covering term of "worry" is often the name for a trouble the essential part of which is the "difficulty of making up the mind." Those who can read between the lines discern also in many a case of suicide the same difficulty as the final cause which plunged a weak and distracted intelligence into the ultimate catastrophe. Sooner than continue the struggle with doubts, alternatives, and perplexities the mind that cannot be "made up" is overthrown altogether. In olden times life owned simpler rules. The dictates of religion were more strictly, even if not more widely, adhered to. Moreover, life itself was less complicated and less hurried, allowing the mind more time for reflection and for composing itself upon any doubtful issue. Consequently the disturbances which we are discussing were less frequent and their consequences less often disastrous. Medical men can do much to encourage in those amongst whom they work something of this old-fashioned leisure of mind—a quality wholly desirable and in no way to be confused with indolence.

SYMPATHETIC OPHTHALMIA.

IN a post-graduate lecture delivered at the Glasgow Ophthalmic Institution and reported in the *Annals of Ophthalmology* (No. 1, 1904), Dr. A. Maitland Ramsay lays down the following rules as a guide to the practitioner in determining whether an operation should be resorted to in cases of traumatism of the eye: 1. Enucleate at once when the injury is so severe that the exciting eye is destroyed hopelessly from the beginning. 2. Enucleate at once on the slightest sign of sympathetic irritation should the vision of the exciting eye only equal a perception of light and darkness. 3. Enucleate at once if a foreign body is present in, and cannot be removed from, the exciting eye. 4. Enucleate at once when an injured eye is blind and suffering from recurrent attacks of acute inflammation or when it is tender and irritable as a result of the onset of degenerative changes, as, for example, ossification of the choroid. 5. Do not enucleate when there is still sight in the injured eye and when there is no sign of sympathetic disturbance in its fellow. 6. Do not enucleate when sympathetic inflammation is in progress and there is still sight in the injured eye, for in these circumstances the removal of the "exciter" will have no beneficial influence and the probability is that in the end all the sight the patient will possess will be in the primarily injured eye. Though exceptions may now and then occur these rules are sound and in accordance with the results of experience.

NON-FATAL RUPTURE OF ANEURYSM OF THE AORTA.

RUPTURE of aneurysm of the aorta usually is immediately fatal. However, a few exceptions have been recorded. In the *American Journal of the Medical Sciences* for July Dr. N. S. Ferry has reported the following case. A man, aged 58 years, had been for 18 years an inmate of an asylum in consequence of dementia. He had had syphilis but had always been in good health. His mental deterioration was but moderate so that he was employed in the hospital. On March 26th, 1898, he suffered from profuse hæmoptysis from which he rapidly rallied. From this time, though robust and never complaining of ill-health, he discontinued work and lounged. On Feb. 17th, 1900, he was found dead in bed surrounded by a pool of blood. The necropsy showed a large aortic aneurysm which communicated by a small opening with a cavity in the left lung. The cavity was distended with clot. Its walls were composed of healthy lung tissue and were ragged giving the appearance of having been torn apart recently. The walls of the aneurysm were studded with necrotic areas, many of which were undergoing ulceration. On the surface of the lung just over the sac was a depression. The tissue at this point was found on section to be hard and dense and composed mostly of scar. This scar formed part of the wall of the aneurysm. Probably the first hæmorrhage occurred at this point and healing took place for some unknown reason. After a careful search Dr. Ferry could find in American and British literature only eight cases recorded in which the patient lived some time after rupture of aortic aneurysm. In the

TO ILLUSTRATE MAJOR DONOVAN'S PAPER UPON HUMAN PIROPLASMOSIS.

THE PIROPLASM OF DONOVAN, LAVERAN & MESNIL.

Transactions of the College of Physicians of Philadelphia for 1891 Dr. M. H. Fussell has recorded the case of a man, aged 46 years, who for several months had suffered from pain in the left chest and back. On April 5th, 1888, he awoke with a salt taste in the mouth. Cough came on and he spat up about a pint of blood, frothy at first, afterwards clotted. He was kept in bed on a low diet and recovered. On August 19th, 1891, he died suddenly in bed. The necropsy showed an aneurysm of the aortic arch to which the left lung was adherent. In the sac were two healed ulcers the base of which was formed by lung tissue. A recent rupture was the cause of death. In the Transactions of the Pathological Society of London for 1861 Sir Samuel Wilks has recorded a case of Aneurysm of the Aorta, Rupture into the Pericardium, Subsequent Closure by Inflammation. The patient was a man, aged 62 years, who was admitted to Guy's Hospital on Dec. 6th, 1860, with symptoms of heart disease. A scarcely perceptible systolic murmur was heard. Two days later acute pericarditis was indicated by a to-and-fro rub over the base of the heart. After some days the pericardial signs gave place to the murmur first heard. The patient gradually became worse and died on Jan. 6th, 1861. The necropsy showed that the parietal and visceral pericardium were adherent by adhesions about three weeks old. At the base of the heart was some clotted blood mixed with lymph. Here the ascending aorta formed a small aneurysm in the centre of which was a rent holding coagulum. Evidently the rupture had caused the pericarditis and the lymph thrown out had prevented further hæmorrhage. In the Transactions of the Pathological Society of London for 1876–77 Sir Felix Semon has recorded a case of Aneurysm of the Thoracic Aorta with Repeated Perforations of the Œsophagus. A man, aged 40 years, was admitted into hospital complaining of dyspnœa and of pains in the chest which seemed to originate under the sternum at the level of the fourth to the sixth dorsal vertebra. For two months food seemed to remain at the level of the pain for some time before entering the stomach. He grew worse and vomiting set in and, during the last few days of life, a dry distressing cough. The necropsy showed an aortic aneurysm adherent to the œsophagus and spine at the level from the fourth to the sixth dorsal vertebræ. The wall of the sac was very thin over the area of adhesion to the œsophagus. In the latter was a perforation containing an organised thrombus of the size of the first phalanx of the little finger; there was also a small recent perforation of the œsophagus. It was thought that the first hæmorrhage took place when the dysphagia began. Trickling of blood must have occurred by drops through a small opening allowing the blood to coagulate. Three other cases are quoted by Dr. Ferry.

THE COMPARATIVE INTELLECTUAL POWERS OF THE TWO SEXES.

A COMPARISON between the mental attributes of the two sexes has practical as well as scientific interests, for from the economic standpoint it is obvious that the world's intellectual work must eventually fall into the hands of those persons, be their sex what it may, who by reason of their mental capacities are best fitted for this purpose. The comparisons drawn by Dr. J. de Körösy, the director of municipal statistics at Budapest, and embodied in a paper read before the meeting of the British Association at Cambridge, are certainly deserving of attention if only for the extensiveness of the observations on which they are founded. As director of municipal statistics he has had opportunities of comparing the examination records of nearly 1,000,000 children, girls and boys, who have received their education both in elementary and in higher grade schools. As gauged by successes and failures the comparison is greatly in favour of the girls and even as regards proficiency in arithmetic, a subject usually regarded as the special prerogative of boys, the balance of proficiency inclines obviously to the side of the girls. The intellectual superiority of girls, as revealed by the test method applied by Dr. Körösy, is so unexpected and so entirely opposed to the teaching of the world's history that we naturally turn to other possible sources of explanation apart from inherent intellectual superiority to reconcile pre-existing conception with the statistical figures drawn from the Hungarian archives. The vulnerable features of these statistics, if, indeed, inferences drawn from the intellectual capacity of the girl can be applied to that of the grown woman, is that they refer to a period of life which both in boys and girls is subject to disturbances, sexual and otherwise. These disturbances are so fundamentally bound up with the general development of the organism, intellectual and organic, that it behoves us to be particularly careful in making any sort of a comparison between the two sexes. The unexplained factors which apparently conduce to a form of intellectual precocity in girls, taken in conjunction with the biological tendency for the establishment of an inverse relationship between the rate of organic development and the duration of a physiologically useful life, may offer some explanation of the fact that nearly the whole work of human progress can be traced to the maturer activities of the male and not of the female intellect.

INTERNATIONAL CONFERENCE ON ANKYLOSTOMIASIS AT COLOGNE.

AT an international conference held at Cologne on August 25th Dr. Tenholt (Bochum, Westphalia) was elected president while the duties of honorary secretary and international interpreter were discharged by Mr. Belger, lecturer in the College of Science, Newcastle-upon-Tyne. Among those present or who sent papers were Dr. Loos (Cairo), Dr. T. Oliver (Newcastle-upon-Tyne), Dr. Goldman (Brennberg, Hungary), Dr. Herman (Mons, Belgium), Dr. Walthring (Herzagenbusch, Holland), Dr. Malvoz (Liège, Belgium), Dr. Lambinet (Liège), and Dr. Nagel (Bochum). As the transactions of the conference may not be published before November we give the following brief account of the proceedings. After business preliminaries were arranged an interesting microscopical demonstration of the mode of entrance of the larvæ of the worm through the skin and thereafter by the blood-vessels, heart, lungs, trachea, and œsophagus was given by Dr. Loos. The opinions which he expressed met with general approbation. In further expounding his views Dr. Loos dwelt upon the glandular structures present in the head of the fully developed ankylostoma and of the toxins probably secreted by them; he also alluded to the rate of progress of the larva through the body from the point of entrance in the skin. Some larvæ reach the intestine much more quickly than others. He also dwelt upon the mode of nutrition of the fully developed worm when in the alimentary canal. Dr. Oliver in his paper referred to the present position of the disease as it affected Great Britain and discussed the most modern theories concerning the causes of the anæmia observed in ankylostomiasis and the probable part played by toxins secreted by the worms themselves. Later the question of eosinophilia raised by one of the members gave rise to an animated discussion. It was generally admitted that while eosinophilia was present in ankylostomiasis this circumstance carried no special importance from a diagnostic point of view, as eosinophile corpuscles in excess are met with in many other maladies. Papers upon the Therapeutics of Miners' Worm Disease were read by Dr. Goldman, Dr. Lambinet, and Dr. Herman, and were followed by a vigorous discussion. The various methods of treatment past and present were fully criticised but no

unanimity of opinion was arrived at in regard to the most trustworthy and the safest vermifuge. The Prevention of the Infection of Mines by the Ankylostoma formed the subject of a valuable paper by the President. He regarded the abolition of moisture in mines and the reduction of temperature as the principal preventive measures. For infected parts of mines he recommended spraying with a solution of lime freshly prepared, two or three applications of which usually succeeded in destroying the larvæ. Dr. Tenholt's views, which are based upon considerable practical experience, carried great weight and met with general acceptance. Dr. Malvoz dealt with ankylostomiasis as it at present affected Belgium, and also with the efforts made to stamp out the disease, while Dr. Walthring spoke of the presence of ankylostomiasis in other places than coal mines—e.g., brickfields. In closing the conference the President remarked upon the good results which were likely to follow the interchange of opinions at the meeting and said that he looked forward to a similar reunion next year.

THE OLDHAM WATER-SUPPLY AND LEAD CONTAMINATION.

FOR some time past cases of illness have occurred in Oldham that seemed to be due to the water-supply and in at least one case a definite diagnosis of lead poisoning was arrived at. This is easily accounted for, as the Oldham water-supply is from upland gathering grounds, in some parts of which there is a considerable amount of peaty soil, and the water from this area has a tendency to dissolve the lead in the service pipes. To remedy this the water is treated as it enters the reservoir. This property of the peat water was shown on a large scale at Sheffield some years since when there was quite an epidemic of lead poisoning. Dr. J. B. Wilkinson, the medical officer of health, says that several analyses have been made at houses where there has been a suspicion of lead poisoning and in a few cases a considerable amount of lead has been found. Where the water has remained in the pipes for 12 hours half a grain per gallon has been found, but in most cases there has been less than one-tenth of a grain per gallon. The water is of great purity and therefore all the more active in attacking the lead. The remedy for, or rather the prevention of, these accidents is, of course, to let the water which has been lying in the pipes be run off in the morning before any is used for drinking, but this is so obvious that careless people, among whom domestic servants may now and then be included, seem apparently all the more determined to ignore it.

PROGNOSIS AND DURATION OF PURULENT OPHTHALMIA.

IN a communication made to the French Congress of Ophthalmology and reported in the *Recueil d'Ophtalmologie* for July Dr. Golesceano of Paris gives the following summary of his notes of 175 cases. Purulent ophthalmia is more frequent in boys than in girls and the left eye is more commonly affected than the right. The affection is attributable generally to maternal leucorrhœa or to the infection of gonorrhœa but there is another agent, for in many cases there is a special virus in the vaginal mucus which probably proceeds from the presence of numerous micro-organisms. Dystocia and any abnormal position of the child during the act of birth are predisposing causes of the attack of purulent ophthalmia, for the child has then time to become infected owing to the undue prolongation of the labour. The period of incubation may be practically absent or it may vary from 24 hours to five or six days, and in one exceptional instance it was considered to have lasted 25 days. Œdema of the lids and serous turgescence with discharge are the ordinary symptoms. False membranes occur in 1 out of 16 cases. A papillary form resembling follicular hypertrophy of the yellow granulations is not uncommon. In regard to complications, abscesses or infiltrations of the cornea usually occur between the eighth and twentieth day. In the early stages complications are rare and though the eye first affected usually suffers most, this is not always the case. Infiltrations or perforating abscesses are always to be feared and may occur as late as five weeks after the outbreak of the purulent discharge. In the 175 cases there were six cases of ulceration affecting one eye only. Instillations of lime-juice or of the nitrate of silver did not seem to act in preventing the access of the disease. The duration of the attack varied from 15 to 45 days, even when treatment was promptly commenced. The average duration of the discharge was about a month. Relapses seem to be common and every case should be watched carefully even when complete recovery has apparently taken place and all discharge has ceased. Some forms are so serious in their nature that no treatment is successful. Cleanliness and frequent washing with boiled water is the best proceeding. The possibility of a nasal origin of the disease should not be overlooked and the instillation of a few drops of mentholated oil is a useful adjunct to ordinary treatment.

THE DANGERS OF CELLULOID.

WE have upon several previous occasions called attention to the dangers of using certain articles made of celluloid where those articles are likely to come into contact with fire either from a stove, lamp, gas bracket, or match, or a spark from a cigar or cigarette. Four months ago one of our special correspondents called attention to a case where a boy's celluloid collar had become ignited by a match carelessly thrown away after lighting a cigarette, and, by the way, we may remark that as a general matter the dangers of throwing away lighted matches do not seem to be sufficiently realised. Now a correspondent has written to the *Times* saying that recently he took a hansom cab from the Great Western Railway Station at Paddington and proceeded to enjoy a cheroot, knocking off the ashes into the celluloid receptacle which in a few minutes began to blaze furiously and set fire to the cab leaving him barely time to jump out into safety. We can hardly do better in commenting upon this incident than repeat what we said in THE LANCET of August 22nd, 1903, p. 552, while denouncing an explosive celluloid or "dimberoid" cigar-holder, to wit that the unrestricted sale of articles made of celluloid, which is practically gun-cotton, for any purpose whereby such article is liable to come into contact with fire should on no account be allowed. We believe there are other dangerous substances related to gun-cotton which go under other names and which are also used for similar purposes and should be likewise banned. It may be that the inflammability of celluloid is sometimes somewhat counteracted by admixture with substances with an opposite tendency, but the difficulty is to distinguish the combustible from the incombustible. At all events some warning should be inscribed on the articles made therewith and they should be marked "highly inflammable" or with some other equally premonitory and protecting device. It is time also that the fire insurance companies should formulate and promulgate warnings and prohibitions in connexion with their policies of insurance, in order to avoid vexatious questions as to compensation for losses sustained by the use and abuse of celluloid articles, after the manner of the by-laws of the railway companies in respect to the carriage of explosives. The dangerous use of celluloid is due in great measure to the fault of the public themselves, for it is mainly the result of the wish to

have something cheap that looks like something costly. Celluloid combs and brushes are bought because they look like ivory or tortoiseshell and the celluloid fittings in carriages are put there because they look like ivory. These last should certainly be made of metal and as for combs and brushes, people who cannot afford real ivory or tortoiseshell should be satisfied with wood, bone, horn, or vulcanite.

APPEARANCE OF ELEVEN CHANCRES IN A MONTH.

WHEN multiple chancres occur in syphilis the rule is that they appear synchronously and are all in the same stage. At the meeting of the Société Médicale des Hopitaux of Paris on July 29th M. Queyrat reported a remarkable case in which 11 chancres appeared in succession. A man, aged 22 years, noticed on June 23rd, 1904, a chancre on the right side of the furrow of the glans penis. On July 1st a second chancre appeared on the prepuce, about the 5th a third appeared on the pubis, then at one, two, or three days' interval eight chancres appeared on the prepuce. The two last ones appeared on the 22nd. He came to hospital on the 27th, when the first three lesions were typical indurated chancres. The other eight were incompletely developed chancres and the more recent they were the less were they developed. The inguinal glands were enlarged. The patient had daily intercourse with a mistress until June 23rd, when on discovering the first chancre he left her. The lesions corresponded neither clinically, chronologically, nor bacteriologically to soft chancres. They were not auto-inoculable. M. Queyrat suggested that the chancres were successively inoculated about a month before the appearance of each. As time went on the patient was becoming more and more immunised against the syphilitic virus. Hence the later chancres were abortive. The two last chancres, which appeared on July 22nd, evidently were the result of the last intercourse on June 23rd. A similar phenomenon is exhibited when a person is successively vaccinated day by day. Immunity against vaccination is not complete until the tenth day and the later the vaccination the less complete is the evolution of the vesicle; finally only small papules, which soon disappear, are produced.

THE LATENCY OF THE BACILLUS OF TYPHOID FEVER.

AN inquest was recently held at Wandsworth Prison as to the death of a man, aged 24 years, who died seven days after he should have been released. He was admitted on Dec. 14th, 1903, having been sentenced to a term of nine months' hard labour. On July 27th he was taken ill with what proved to be typhoid fever which had a fatal termination, death being due to intestinal hæmorrhage. The question naturally arises as to the source of the fever. There had been no other cases in the gaol and the coroner (Mr. R. Henslowe Wellington) asked whether it was possible that the pathogenic organisms might have been in the man's system before he entered the prison. That the bacilli may be retained in the body for long periods has been proved by many recorded instances. Dr. P. Horton-Smith in delivering the Goulstonian Lectures before the Royal College of Physicians of London in 1900 quoted cases in which it had been demonstrated that the typhoid bacillus persisted in the body, especially in the bile, for three months after the fever in one instance, in another case for eight months, and in a third case after an interval of seven years. Dr. Sidney H. C. Martin found that the bacillus, when implanted in organically polluted soil, "speedily increased and spread abroad," and that when the soil is a favourable one for the bacillus the latter has been found to be alive and to retain its vegetable properties for as long as 456 days. From these investigations, then, it would be fair to assume that the bacillus might be retained in the human organism for a considerable time without giving rise to an attack of typhoid fever, although the characteristic symptoms might ultimately develop. Dr. Thomas Cherry in an address delivered before the sixth session of the Intercolonial Medical Congress of Australasia in 1902[1] quoted a case in which it was shown that a man who suffered from an attack of typhoid fever must either have carried the contagion with him for 15 months or else that the disease originated *de novo*. The coroner's question, therefore, was to the point and in the light of the above considerations might have been answered in the affirmative.

OPHTHALMOLOGICAL CONGRESS IN LUCERNE.

THE Tenth International Congress of Ophthalmology will be opened in Lucerne on Sept. 13th, when there will be a reception by the municipality at 9 P.M. and Dr. Hermann Heller will deliver an address. The proceedings will commence on Sept. 14th at 9 A.M., when Professor Marc Dufour of Lausanne will deliver an address and there will be a discussion on the estimation of the loss sustained by destruction or injury of an eye. On Sept. 15th there will be a discussion on the notation of visual acuity. The total number of communications announced is 95, seven of them being by British ophthalmologists. The congress will close on Sept. 17th.

THE SIMPLON TUNNEL.

THE making of a long railway tunnel under a mountain is a great enterprise in every respect and may present some pecial features of medical interest. The Mont Cenis tunnel between Modane and Bardonnechia was the first of these Alpine thoroughfares. The St. Gothard tunnel (1872–80) came next in order and was remarkable for the high mortality among the workmen employed in making it; at least 600 of them died, including the engineer and the contractor. The Simplon tunnel, which will be traversed by a railway connecting Brigue in Switzerland with Domo d'Ossolo in Italy, is at present in course of construction, having been commenced in November, 1898. The distance between its two portals is 12·26 miles, as compared with the eight miles of Mont Cenis and the nine miles of the St. Gothard tunnels. About the beginning of 1902 Dr. Thomas Oliver of Newcastle visited the works and a *résumé* of his observations was published in THE LANCET of August 9th, 1902, p. 370. His object was mainly to learn something of the hygienic and medical problems raised by the massing together of thousands of workmen in a remote valley. He found that the conductors of the enterprise were strongly impressed with the importance of employing healthy men and paying strict attention to sanitary details. At Iselle on the Italian side nearly 2000 men were employed, of whom there were always 500 in the tunnel. Bronchitis and rheumatism were the diseases of most frequent occurrence; intestinal catarrh was also common; there had been no enteric fever or ankylostomiasis. The hospital at Iselle contained 24 beds. At Brigue on the Swiss or northern side of the mountain more men were employed and the hospital was a little larger. About this time the water which was met with had a temperature of about 44° C., but as the boring advanced during the ensuing two years the water increased very much and its temperature rose to 49° C. Tunnels usually ascend from either portal to a more or less central point; after the Brigue or northern end, which is the more advanced of the two, had been excavated to this extent it sloped downwards away from the entrance and

[1] THE LANCET, April 19th, 1902, p. 1141.

the water which made its way through the sides of the tunnel no longer flowed out naturally. A long account of the state of the work, with drawings, is given in the *Engineer* of August 19th. The northern tunnel has now reached a distance of 6·3 miles from the Brigue portal, but its further end is full of hot water. Only about 360 yards remain to be bored and this will be done entirely from the southern or Iselle tunnel. As the water flows away naturally from this part of the workings it is not expected that there will be any serious impediment to the completion of the work.

Mr. Herbert James Cove, formerly of the Members waiting-room, House of Commons, and locally well known in connexion with the now extinct vestry of St. George's Hanover-square, has left estate valued at more than £42,000 which, subject to some legacies, is bequeathed in varying shares to the Royal London Ophthalmic Hospital, the Royal Westminster Ophthalmic Hospital, and the Middlesex Hospital.

His Majesty the King has been pleased to make the following appointments to the Royal Victorian Order:—To be Honorary Commander: Dr. Joseph Kerzl, physician-in-ordinary to His Imperial Majesty the Emperor of Austria, King of Hungary. To be Honorary Member of the Fourth Class: Dr. Gustav Henry Anton Besold, director of the Falkenstein Sanatorium.

OPENING OF THE MEDICAL SCHOOLS.

WINTER SESSION, 1904–05.

LONDON.

St. Bartholomew's Hospital.—The session will begin on Oct. 3rd.

Charing Cross Hospital.—The winter session will be opened on Oct. 3rd by the delivery of the fifth biennial Huxley Lecture on "Recent Advances in Science and their Bearing on Medicine and Surgery," in the anatomical theatre of the medical school, at 4 P.M., by Sir William Macewen, F.R.S., Regius Professor of Surgery in the University of Glasgow. The dinner of the past and present students will take place at the Hôtel Métropole on the evening of the same day.

St. George's Hospital.—The session will commence on Oct. 1st. The introductory address on "Some Landmarks in the History of Medical Education" will be delivered at 4 P.M. by Professor Alexander Macalister of Cambridge University, and the annual dinner will take place the same evening at the Hôtel Métropole.

Guy's Hospital.—The session will open on Oct. 3rd. A house dinner will take place at 7.30 P.M. in the College dining-hall. Sir Thomas Stevenson will preside, and Mr. Robert Gordon, president of the Clubs' Union Council, will be the guest of the evening. Applications for tickets for the dinner should be made to Mr. A. W. Ormond, F.R.C.S., honorary secretary of the Students' Club, Guy's Hospital. The opening meeting of the Physical Society will be held on Saturday, Oct. 8th, in the physiological theatre, at 8.30 P.M., when Sir Samuel Wilks, Bart., F.R.S., will be in the chair.

King's College Hospital.—The session will begin on Oct. 4th, when the distribution of prizes will take place and the address will be delivered by Dr. Thomas Buzzard on "The Future Relation of King's College to its Medical School and Hospital." The annual dinner will be held the same evening.

London Hospital.—The session will be opened on Oct. 1st. The old students' dinner will be held in the College Library on Oct. 3rd, Dr. Percy Kidd, physician to the hospital, in the chair.

St. Mary's Hospital.—The session will commence on Oct. 3rd. The introductory address will be delivered on the same day by Dr. A. E. Wright, pathologist to the hospital and lecturer on pathology and bacteriology in the medical school. The annual dinner of past and present students will be held at the Whitehall Rooms, Hôtel Métropole, in the evening, Mr. A. Q. Silcock in the chair.

Middlesex Hospital.—The session opens on Oct. 3rd. The introductory address will be delivered by Dr. F. J. Wethered at 3 P.M. The prizes will be distributed by his Serene Highness Prince Francis of Teck, G.C.V.O., D.S.O. The annual dinner of the past and present students and their friends will take place at the Trocadéro the same evening at seven o'clock precisely, Dr. Sidney Coupland in the chair.

St. Thomas's Hospital.—The session will open on Oct. 3rd.

University College Hospital.—The session will be opened on Oct. 3rd, at 4 P.M., when the dean's report on the progress of the Medical School will be read, after which an introductory lecture will be delivered by Professor J. Norman Collie, F.R.S. The annual dinner of the past and present students of the Medical Faculty will take place at the Hotel Cecil on Monday, Oct. 3rd, at 7 P.M. The chair will be taken by Mr. John Tweedy, President of the Royal College of Surgeons.

Westminster Hospital.—The session begins on Monday, Oct. 3rd. The annual dinner will take place on the opening day, at the Trocadéro, Dr. W. Rivers Pollock in the chair. Secretaries of dinner: Mr. Arthur Evans, M.S., F.R.C.S., 84, Harley-street, W.; Mr. J. W. L. Scott, Westminster Hospital; and Mr. C. A. Hallett, Westminster Hospital.

London (Royal Free Hospital) School of Medicine for Women.—The introductory address will be given by Miss Murdoch at the Medical School on Monday, Oct. 3rd, at 4 P.M. The winter session begins on Oct. 4th.

Royal Dental Hospital.—The session will commence on Oct. 1st.

National Dental Hospital.—The session will commence on Oct. 3rd.

PROVINCIAL.

University of Birmingham.—The session will open on Oct. 3rd.

University College, Bristol.—The session will commence on Oct. 3rd.

University College, Cardiff.—The session will begin on Oct. 4th.

University of Leeds.—The session will open on Oct. 3rd.

University of Durham.—The session will commence on Oct. 3rd.

University of Liverpool.—The session will open on Oct. 3rd.

Owens College, Manchester.—The session will commence on Oct. 3rd.

University College, Sheffield.—The session will open on Oct. 3rd.

SCOTLAND.

University of Aberdeen.—The session will open on Oct. 11th.

University of St. Andrews (United Colleges of St. Andrews and University College, Dundee). The session will open on Oct. 12th.

University of Edinburgh.—The session will commence on Oct. 18th.

University of Glasgow.—The session will open on Oct. 13th.

Anderson's College, Glasgow.—The session will begin on Oct. 13th.

St. Mungo's College, Glasgow.—The session will begin on Oct. 13th.

Queen Margaret College, Glasgow.—The session will begin on Oct. 13th.

IRELAND.

Queen's College, Belfast.—The session will begin on Oct. 18th.

Queen's College, Cork.—The session will begin on Oct. 18th.

University of Dublin.—The session will begin on Oct. 1st.

ENCOURAGING WOMEN'S MEDICAL EDUCATION IN RUSSIA. A QUESTION OF PREFERENCE.—Touching the enlarged scope of the Women's Medical Institute in St. Petersburg the *Novoe Vremya* exclaims the first shall be last and the last first, for two professorships of midwifery and gynæcology are to be allocated to that institute, besides separate chairs for—(1) bacteriology, (2) rhinology and laryngology, and (3) epizootiology. Of the three last named there is not a chair in the medical faculties of the universities and of midwifery and gynæcology there is but one. The *Russki Vratch* says, in relation thereto, it must be hoped that the universities will be similarly treated: for in the contrary case it would be a clear injustice to establish for women a medical education superior to that provided for men.

THE EVOLUTION OF MAN'S DIET.

BY HARRY CAMPBELL, M.D., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE HOSPITAL FOR NERVOUS DISEASES, WELBECK-STREET.

I.

DURING man's evolution from the anthropoid his diet has undergone a succession of changes and it is somewhat remarkable that in the present age of eager and even feverish investigation, when so few fields are left unexplored, no one should have essayed the important task of tracing out these changes—of investigating the "evolution of man's diet," as we may term it, from the anthropoid period down to the present time. Yet with the single exception of Payne's work, published in 1892, on "The History of the New World called America," a book characterised alike by its great learning and its broad philosophical spirit, I have not been able to discover any writings which touch upon the subject, and even Payne does not deal with pre-agricultural or (to use a more comprehensive term) pre-cibicultural times.

The neglect to explore this promising field of investigation is much to be regretted, for a knowledge of the changes which man's diet has undergone from early times cannot but be of the greatest value to the physician, whether in enabling him to construct a rational dietary in health and disease or to interpret the many disorders which result from unsuitable food.

The present is an attempt to supply the deficiency. There being, with the single exception above noted, no previous writings on the subject to fall back upon, I have had to depend for my data chiefly upon records of the diet of the anthropoids and of primitive peoples as met with in books of travel and elsewhere—a necessity which has involved reference to some hundreds of writings, and in this I have received invaluable help from Miss Eva Dunn, but for whose indefatigable industry I could hardly have undertaken the present inquiry and to whom I desire here gratefully to record my obligation.

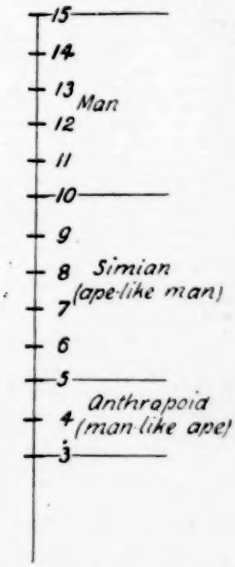
It will be well, as a preliminary, to make clear certain points in regard to man's past evolutionary career. With them the present section is occupied.

THE METHOD OF DENOTING THE SUCCESSIVE GRADES OR STAGES IN MAN'S EVOLUTION FROM HIS ANTHROPOID PRECURSOR.

This can best be done, I suggest, in terms of cranial capacity. Cranial capacity averages in existing anthropoid apes about 500 cubic centimetres [1] and in the European 1500 cubic centimetres. Now, man is not derived from any of the existing anthropoids but he and they have come from a generalised anthropoid precursor. Assuming the cranial capacity of this latter to have been 300 cubic centimetres we may mount upwards by successive grades of 100 cubic centimetres to 1500 cubic centimetres, or (striking out the noughts) from 3 to 15 (see Fig. 1). Thus we may speak of the ape-like precursors of man as belonging successively to the third, fourth, fifth, sixth, seventh, eighth, and ninth grades; and if we suppose the rank of homo to have been attained at the tenth grade, the successive stages in the evolution of man proper may be spoken of as the tenth, eleventh, twelfth, thirteenth, fourteenth, and fifteenth grades respectively. It is further convenient to divide the pre-human grades into the anthropoid (third to the fifth) and the homo-simian (sixth to the ninth). We can thus speak of a third anthropoid, a seventh homo-simian or a thirteenth man, each term denoting a definite phase in man's philogenesis.

This plan of taking cranial capacity as the criterion by which to indicate successive stages in the evolution of man from the anthropoid is, I think, a legitimate one, for his evolution has essentially been an evolution of the brain and other great nerve centres. It is essentially by virtue of his growing mind power that man has emerged from the beast and come to what he is, separated by an enormous gulf from all other animals. In the earlier phases of his evolution, when he was passing, let us say, from the fifth to the eighth or ninth grade, it is true that not only his nervous system but the other parts of his body, more especially his skeletal and tegumentary systems, underwent a pronounced change, but these changes were insignificant as compared with those by which he grew in mental strength and by which he was destined to transcend all Nature's past achievements—in this world, at least. Moreover, when once the tenth grade had been reached and the evolving man had acquired an essentially human aspect, the non-nervous part of his organism underwent comparatively little further change, and it has since the thirteenth or fourteenth grade was attained remained (so far as gross anatomical structure is concerned) all but stationary and will probably continue so to remain in the future, save in so far as the increasing size of

FIG. 1.



The evolution ladder showing man's ascent from the ape. The lowest rung, 3, represents the position of man's primitive anthropoid precursor with a cranial capacity of 300 cubic centimetres. The highest rung, 15, represents the position of the modern civilised man with a cranial capacity of 1500 cubic centimetres. The dignity of manhood was attained, it is assumed, at the tenth rung, when, i.e., the cranial capacity was 1000 cubic centimetres. The anthropoid stage, or stage of the man-like apes, extended from the third to the fifth stage; the simian (preferably homo-simian) stage, or stage of the ape-like men, from the fifth to the tenth stage; and the stage of man from the tenth stage onwards.

the head will necessitate correlative changes in the body supporting it.[2] On the other hand, the evolution of the brain has continued throughout all this time and is destined, one cannot doubt, to go on so long as the physical conditions of our planet remain favourable.

It has been argued that there is no relation between the size of the brain (which, of course, varies directly with our criterion, cranial capacity) and mental capacity, and I admit at once that there is not any *exact* relation between the two. A small brain may, by virtue of greater complexity of its convolutions, the more elaborate organisation of its cellular elements, the more intricate arrangement of its commissures, or what not, be a better mind organ than a larger brain. Experience daily proves this. Given, however, equality of structure and it is evident that mental capacity must vary directly with the size of the brain. Now, granting that exceptionally highly organised brains are occasionally found

[1] It is somewhat under this, considerably so in the case of the gibbons.

[2] I must guard myself against misapprehension here. I am not, of course, contending that man's organisation is not liable to change from generation to generation. So far as external conditions vary from generation to generation so far must changes take place in the organism to meet them. In this sense no species can long remain absolutely stationary. But these changes are not necessarily evolutionary in the Spencerian sense; they may be simply adaptive without leading to *higher* organisation, as when, e.g., the organism becomes modified to resist the influence of some pathogenic agent such as the tubercle bacillus.

in small skulls, there is no reason why they should be contained in such skulls rather than in larger ones; one would, on the contrary, expect to find the most highly organised brains the most bulky and therefore lodged within the largest skulls. Assuming, however, as we are surely justified in assuming, that in the aggregate—i.e., taking large and small brains together—there is structural equality, there must also in the aggregate necessarily be a direct relation between size of head and mental capacity, and I have no doubt that there actually is. We shall generally find that the large headed men carry off the prizes of the world.[3] And just as we observe a steady increase in the size of the head in passing from the anthropoid to the savage and from the latter to civilised man, so I doubt not will man's brain continue to increase in size in the time that is to be.

But while suggesting that cranial capacity affords the best means of denoting the various steps in man's ascent from the anthropoid, I must not be thought to contend that it constitutes an exact means, for we are probably not justified in assuming that every successive increment in cranial capacity, or what comes to the same thing, brain weight, represents an exactly corresponding advance in mental power. Were increase in brain weight always accompanied by a corresponding increase in the complexity of brain organisation (as represented by intricacy, depth of convolutions, &c.), this assumption would indeed be justifiable, but it does not seem improbable that in the higher grades—let us say the twelfth, thirteenth, fourteenth, and fifteenth—complexity of brain structure advances more rapidly than increment in brain weight, in which case there would not be an equal advance in brain power with each successive grade from the twelfth onwards, but an advance becoming greater with each grade, so that the mental advance of the twelfth to the thirteenth might be represented not by 1·0 but by, say, 1·2, that from the thirteenth to the fourteenth by 1·6, and that from the fourteenth to the fifteenth by 2·0.

There are obvious disadvantages attaching to a large head and we can well believe that when a certain size of head has been attained Nature may make an effort, so to say, to secure an advance in cerebral power by means of an increase in brain complexity rather than in brain weight. All this is, of course, mere surmise, but the point is one which should be capable of being practically tested. In any case, the method which I have suggested of indicating the successive steps of man's evolution is probably the most accurate at our disposal.

The Relation of Man's Evolution-grades to the Geological Epochs.

Beginning with the miocene or mid-tertiary epoch (see Fig. 2), which lasted 1,000,000 years, we pass successively through the pliocene or upper tertiary (850,000 years), the pleistocene or quarternary (530,000 years), and the post-pleistocene (100,000 years); to which we may add the prehistoric, from the beginning of the Egyptian and Babylonian cultures (20,000 years), and the historic (10,000 years). These figures are taken from Keane.

A word here may be said on the subject of the stone ages. Flints artificially splintered by fire have been found in the lower miocene (Thenay, France) and others fractured by percussion in the upper miocene (Otta, Portugal). Mortillet assumes these to be the work of a pre-human—a homo-simian, but it is questionable whether we should not regard those of our precursors who had sufficient intelligence to fashion flints for their use as veritable human beings. This primitive stone age is spoken of as the *eolithic*. By the *palæolithic* age is generally meant a much later one—namely, the age of chipped flints characteristic of the long-headed pleistocene race of Europe, a race which, as shown by the Neanderthal skull, had reached at least the twelfth if not the thirteenth grade. During the whole of this palæolithic age, except the final stage, the implements of stone underwent a steady evolution, becoming both more numerous in design and more finished in execution. Finally came the *neolithic* or age of polished stone, corresponding to the post-pleistocene period. With the prehistoric period the age of metals commenced.

[3] Dr. J. H. Gladstone has recently investigated the relation between size of brain and intelligence and he finds it to be a direct one. It is strange that there should be any doubt about the matter. The heads of our last five Prime Ministers have certainly been considerably above the average, and who can doubt that such is for the most part true of our Lord Chancellors, Senior Wranglers, and eminent men generally?

Changes in the Earth's Surface during the Period of Man's Evolution.

Since man started on his career of evolution from a primitive anthropoid in the miocene period vast geological changes have taken place on the earth. Continents have been submerged by the ocean and from the ocean new lands have arisen, inland seas have disappeared, mountain ranges have sunk while others have become more lofty, large fertile tracts have been converted into arid wastes, e.g., the Sahara, while the northern hemispheres have at least twice been covered with an ice-cap for periods lasting many thousands of years. All these changes have, it need scarcely be said, led to profound climatic alterations, having an intimate bearing on the evolution of man. A very brief reference to some of the more important of these geological changes must suffice us here.

FIG. 2.

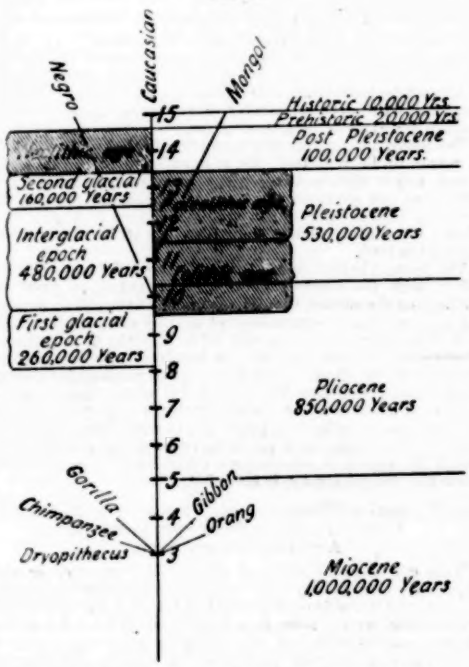


Diagram showing the supposed relation of the evolving man at each successive grade of his evolution to the geological and glacial epochs and the stone ages (eolithic, palæolithic, and neolithic). Further knowledge will doubtless necessitate considerable modifications in this diagram. Stage 10 may be provisionally labeled homo-javanensis. Thus, contrary to what is here suggested, it will not improbably be found that the tenth grade was reached a long time before the late pliocene, since artificially worked flints, denoting considerable advance in evolution, have been found in miocene strata. Hence the early stone age (eolithic) began at an earlier period than is here indicated. The second glacial epoch should not have been represented as lasting till the end of the palæolithic age the last phases of which (Solutrian and Magdalenian) were post glacial.

While man was beginning his struggle upwards from the ape a vast continent stretched from India to Africa, and the islands of the Malay Archipelago (Borneo, &c.) were joined to Indo-China; Australia stretched out much further than it now does in all directions and was in the north joined on to New Guinea; the Pacific Islands, collectively known as Polynesia, represent the remains of what was then a vast continent; Africa was joined on to Europe at several points across the present Mediterranean Sea; the region of the Sahara desert was some 2000 feet higher than it is at the present time and was watered by many great rivers; a large part of Central Asia was submerged; Britain was united to Greenland by nearly continuous land, and Asia to America in the region of Behring Strait.

Much doubt exists as to the exact dates and duration of the ice ages. Keane makes out the first glacial epoch to

begin towards the close of the pliocene age (see Fig. 2), some 980,000 years ago and to last some 260,000 years—i.e., up to the beginning of the pleistocene era; and the second ice age to begin 240,000 years ago and last 160,000 years. This gives an inter-glacial period of 480,000 years. During each of the ice ages the ice-caps slowly advanced southwards, involving both of the northern hemispheres (north America and the greater part of Europe and north Asia—the Siberian Tundras), and after lasting a certain period gradually receded. During that vast inter-glacial period the climate of the northern hemisphere was much milder and more equable than at present, a circumstance which, coupled with the extensive land connexions which then existed—e.g., between India and Africa, Europe and North America, Asia and North America—greatly facilitated the dispersal of man over the earth. Moreover, there are good grounds for concluding that the climate of the southern hemispheres was more temperate than it is now; the heat of the tropical regions was less intense, while what is now the Sahara desert was an eminently inhabitable region.

THE DISPERSAL OF MAN OVER THE WORLD.

The cradle-land of man must have been in some part of the wide area originally occupied by the anthropoid apes. This latter in the miocene age extended from Malaysia across the Indo-African continent into the southern parts of Europe where extinct anthropoids have been found, the most interesting of which is a generalised anthropoid, the dryopithecus (see Fig. 2), which by some has been regarded as the common ancestor of man and the existing anthropoids—namely, the gibbon and orang, now found in Indo-Malaysia, and the gorilla and chimpanzee, met with in tropical Africa. It is quite possible that the home of the early anthropoid precursor of man (say from the third to the fifth or sixth grade) was a comparatively narrow region, but I do not think, as some do, that the birthplace of man proper—i.e., the being belonging to the tenth grade—can have been thus limited, for it is very unlikely that with his superior intelligence he would confine himself to a limited area. Admitting that our precursors up to the sixth grade remained confined to, let us say, the Indo-Malaysian or some part of the Indo-African continent, one can scarcely doubt that when the next grade was reached there would be a tendency to spread over a wider region. The anthropoid of the seventh grade must have greatly surpassed in intelligence all other anthropoids, and with the advantages which this gave him over them as well as over other animals, and his greatly superior power of adapting himself to his surroundings, we may safely conclude that he would tend to spread to far distant parts. Instead, then, of placing this dispersal, as probably most anthropologists would, at a comparatively late period of evolution, I am more disposed to put it as early as the seventh, if not the sixth, grade of evolution, and by the time the ninth or tenth grade was reached I should expect the evolving man to have ranged over the entire region originally occupied by the anthropoids. But this assumption presents an apparent difficulty. We have to remember that the three great divisions of man—Caucasians, Mongols, and Negroes—all originated from a generalised homo: not until this being was evolved did the specialisation of the three types begin. Now it seems very improbable that this specialisation began before the tenth, or at the latest the ninth, grade was reached, because if it had begun earlier we should find far greater divergences between the three great races of man than we actually do—we should expect them, in fact, to form distinct species mutually infertile, whereas in actual fact they constitute but varieties of one species. How, then, can we reconcile the assumption that already at the seventh stage man's precursors had spread over a wide area with the further assumption that specialisation did not begin until the ninth or tenth grade was reached? The evolution from the seventh to the tenth grade must have occupied a vast period of time, probably some hundreds of thousands of years, and surely—so it might be argued—the only way of preventing specialisation from occurring during so vast an epoch is by limitation of the species to a comparatively narrow area where the external conditions are much the same and free miscegenation can occur. This consideration suggests that the hypothetical extensive area occupied by the immediate precursors of man proper possessed much the same climate throughout its entire extent, and, further, that migrations and intermingling of separate groups were constantly taking place, for it seems improbable that similarity of climate would alone suffice to prevent specialisation: one must further assume constant intermingling, and this is precisely what one would anticipate with highly intelligent beings. Only in this way can we explain the great uniformity among the aboriginal Australians and the African negroes (except where there has been admixture with Hamitic blood), both of which races, but especially the latter, range over an immensely wide area.

Let us suppose, then, that we have arrived at the tenth grade—i.e., at the phase when primeval man may be said first to have made his appearance. Strictly speaking, we cannot, of course, single out any one rung on the evolutionary ladder and say that when it was reached then, and then only, was racial manhood attained; we cannot say of any one part in the long upward path "here the ape ended and the man began," for the simple reason that the one gradually merged into the other. For convenience we may, however, agree to confer the dignity of manhood upon the tenth-grade being. It was probably about this phase that artificial means were first employed in hunting and fishing—i.e., that the genuine hunting period was entered upon. This marks an important step in man's philogenesis and I suggest that this ability to devise artificial means for increasing the food-supply shall be regarded as the criterion of racial manhood. Not until it was acquired was it possible for the evolving being to spread far and wide over the earth. Now the remains of a being with a tenth-grade dolichocephalic cranium showing certain simian peculiarities have actually been found in the pliocene bed at Java (see Fig. 2)—i.e., in one of the islands of Malaysia, all of which were originally joined on to Indo-China—and we may suppose this tenth-grade man to have occupied the greater part of the Indo-African continent, and from this point of development to have specialised into the Caucasian, the Mongol, and the Negro. This specialisation took place chiefly in adaptation to climatic changes and must have been effected, if we are to accept modern teachings, by the operation of natural selection—not, i.e., by the direct effect of climate on the soma, inasmuch as acquired characters (somatic variations) are now known not to be inherited. We must assume that until the tenth grade was reached much the same kind of climate prevailed throughout the great part of the Indo-African continent, but that about this time or even earlier certain geographical changes began to make themselves felt, one of the most important being the gradual subsidence of a large part of the continent, considerable alterations of climate following as a result.

The first specialisation to take place was probably that of the Negritoes, a highly prognathic dwarf race, more simian in appearance than any other now existing. These pigmy peoples are found in isolated groups in the forests of Central Africa where they are dark-skinned and in the southern parts of that continent where as the yellow-skinned Bushmen they were originally the sole inhabitants as far north as the Zambesi.

Besides the African there are the Oceanic Negritoes, found in the Andaman Islands, the Philippines, the Malay Peninsula, and neighbouring parts. These are all black-skinned and some of them very simian in appearance. There seems to be little doubt that the Oceanic and African Negritoes belong to one primitive group and that they were in remote times cut off from one another by the submergence of that part of the Indo-African continent now occupied by the Indian Ocean. We may assume that from the Negritoes there developed in times still extremely remote the African Negroes, who, being of more powerful build than their pigmy progenitors, gradually drove them into inaccessible and less attractive parts, notably into forest regions, where they have remained to this day in the most primitive stage of culture.

The Oceanic Negritoes are in like manner found in inaccessible regions, such as the Andaman Islands, the Malay Peninsula, and the forests and hills of the Philippine Islands, whither they have been driven by the more recent Malay immigrants. It is not, therefore, surprising that all the Negritoes are still, or were till quite recently, in the precibicultural stage, living by hunting and fishing and on wild vegetable products.

It should be noted that these Negritoes, as well as their Negro descendants, were specialised in regions more or less tropical, but other tribes of the tenth-grade man occupied more northern regions and became differentiated in an entirely different way—i.e., into Caucasians and Mongols. It seems probable that the specialisation into these two types did not

take place till some time after the Negrito branch was given off, but that the more northern peoples continued to evolve for a long time on identical lines before the second great divergence occurred,[4] one of the changes they underwent being a considerable diminution in prognathism. It was not until, say, the eleventh grade had been reached that a parting of the ways took place (see Fig. 2), the inhabitants of the northern parts of Africa becoming specialised into the Caucasian race and those who had travelled up through India to the tableland of Tibet (in those pleistocene times many thousand feet lower than at present) becoming changed into the Mongolian race. Now that artificial means for hunting and fishing had been acquired this dispersal was no longer impossible.

The evidence in favour of the Caucasian race having evolved in North Africa has been advanced with great force by Keane. From this salubrious region successive streams of migration to Europe took place across the isthmuses which then united the two continents. In the early (Chellian) period of chipped flints the long-headed Neanderthal people moved northward; next followed the long-headed Cromagnon people of France, and finally a round-headed people. It has been definitely established that all these types were differentiated in North Africa.

Here it may be mentioned that the early periods of chipped flints, both palæolithic and eolithic, seem to be associated exclusively with a dolichocephalic race, for all skulls found belonging to these periods are dolicho. This, taken in conjunction with the fact that some of the most primitive people now living, such as the Bushmen and the Australian aborigines, show the same peculiarity and that the Java skull is pronouncedly dolicho, suggests that the simian progenitor of man also was dolicho. (Of the existing anthropoids the gibbon alone is long-headed.)

The Caucasian emigrants from Africa did not limit their wanderings to Europe. In remote times a long-headed people travelled over the land which then united Britain to America and dispersed over the whole of the American continent, where their representatives are still found among the Eskimo, Botocudos (Brazil), and Fuegians; others passed into Asia, occupying India, and further east the Japanese islands, in some of which they are still represented by the hairy Ainus, and even spreading themselves as far as Eastern Polynesia and New Zealand.

The Mongols, differentiated on the tableland of Tibet, spread over a large part of Asia, thence into Malaysia, and later in neolithic times into Europe, where they mingled with the Caucasian peoples, and into America across the land now occupied by Behring Strait, not more than 60 miles across at its narrowest. Thus, according to Keane, this continent was peopled by two races—by the long-headed Caucasians in the palæolithic age and by the round-headed Mongols in the neolithic age—and these intermingling formed the aboriginal Americans as met with at the time of the Discovery. That the last neolithic immigrants arrived in America an immense time ago is shown both by the absence of affinity between the American languages and all others, and by the remarkable racial uniformity of the aborigines throughout the northern and southern continents. All the progress which had been made in America at the time of the Discovery was essentially indigenous, every attempt at explaining the ancient civilisations of Mexico, Peru, and Central America on the assumption of extraneous influences having signally failed. We may, in short, safely follow Keane in his contention that America had for an immense period of time before the Discovery remained practically isolated from the rest of the world. I insist upon this fact because we shall find it of great interest in reference to the dietetic customs of the aborigines.

The inhabitants of Australia and Tasmania had from remote times until the discovery of these countries by the white man been in a similar way practically cut off from outside influences, and they were actually in a lower stage of culture than the Europeans of the early (Chellian) palæolithic age. Much doubt still exists concerning the racial affinities of these Australians and Tasmanians (now unhappily extinct), the prevailing opinion being that they are a mixture of negroes and dark Caucasians. But, however this may be, all the aboriginal Australians may, as Keane observes, be regarded "as members of a single ethnical division, and we at once recognise the vast period of time needed for the development of their highly specialised type." A. W. Howitt concludes that they arrived in Australia before the present distribution of land and water and that since that remote time they have been completely isolated.[5]

It is somewhat remarkable that while such vast countries as America and Australia remained from very early times practically cut off from the rest of the world this was by no means the case with many smaller island communities separated often by thousands of miles of ocean. Most of these oceanic populations have, in fact, been from quite early times in a fluctuating state.

The Malays, a Mongoloid race many grades above the primitive Australians in culture, inhabit not only Malaysia but islands as widely apart (6000 miles) as Formosa and Madagascar, the affinities of whose inhabitants are attested alike by their language, their customs, and their physical conformation; and there are similar indications of intercourse between the island populations of Polynesia—i.e., those islands in the Pacific which constitute the last remnants of the submerged Pacific continent. It is for this reason that very few of these island communities have been found to be in the pre-agricultural stage—none, in fact, wholly so except the Andamanese, the Negrito inhabitants of the Philippines, the Veddahs, or aboriginal Caucasian inhabitants of Ceylon, and the Ainus, a hairy Caucasian people inhabiting certain islands north of Japan.

Unlike the aborigines of Australia and America, the inhabitants of Africa have never been cut off from the rest of the world. This vast continent is, it should be remembered, practically a peninsula of Asia, and it was, moreover, formerly connected with Europe at several points, and has never since the first peopling of the earth by man been isolated. South of the Sahara it is peopled for the most part by pure Negroes, by Negroid Bantus, and by a few isolated Negrito groups, including, in the extreme south, the Hottentots and the Bushmen. North of the Soudan (Sahara, Mauritania, Egypt, Somaliland, Abyssinia), we find Semites and Hamites intermingled, both of these being branches of the Caucasian race, and in the Soudan itself a Hamitic strain is observed in varying degrees among the Negro population. Among all these peoples the dark Negritoes of the forests, &c., and the Bushmen alone are in the pre-cibicultural stage. The Hottentots, while they do not cultivate the soil, yet keep flocks and herds.

(To be continued.)

[4] The fact that Mongoloid idiots are not infrequent among Caucasian peoples while Negroid idiots never occur strongly suggests that the Caucasian race has not come through the negro, but that after the negro offshoot was given off the common ancestors of the Caucasians and Mongols evolved along identical lines, divergence not occurring until decided Mongoloid characters had been acquired.

[5] This statement may be taken as substantially true. There cannot be said to have been absolute isolation any more than there was in the case of America. Occasional boats from neighbouring islands certainly landed from time to time and there was slight intercourse with the inhabitants of the northern islands, but these outside influences had no material effect upon the customs of the people.

THE ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR 1903.

SECOND NOTICE.

THE reader of this Blue-book who desires to compare the conditions and incidents of manufacture in various parts of the United Kingdom is considerably hindered in his task by the absence of an index, to which attention has already been called, and he is not assisted by any conspicuous uniformity of method on the part of the inspectors, extracts from whose reports are incorporated in it. For example, should he turn his attention to accidents in factories and workshops, an interesting and important subject, he will find in the course of the research which the want of an index imposes upon him that the superintending inspector for the Southern Division under the heading of "Safety" subdivides accidents into three classes: (1) accidents caused by machinery; (2) accidents not so caused; and (3) fire. In the following report—that for the Midland Division—he will find the word "accidents" used as a main heading, that these are divided into fatal and non-fatal accidents, and that the latter class is subdivided into those reportable to inspectors and certifying surgeons

and those reportable only to inspectors. The third report, that of the North-Western Division, returns to the main heading "Safety," and proceeds to classify accidents under "fatal" and "non-fatal," but without the subdivisions used by the chief inspector for the Midlands. On the whole the distinction between fatal and non-fatal accidents would appear to be one easily drawn but of no great practical utility, as circumstances may convert a serious accident into a fatal one and at the same time may have no relation to the original danger which caused it and no bearing on the means to be taken to prevent its recurrence. On the other hand, the line between occurrences due to machinery and those which proceed from other causes may not always be easy to draw, and the demarcation may at times seem artificial, but the object of fixing the responsibility is best attained by divisions which on the whole enable us to appreciate the comparative dangers of different forms of labour, the recklessness of employés and the means taken to enforce safety. For instance, at page 15 we read that "A boy saw a piece of string being carried round by a revolving shaft and immediately conceived the idea of getting it; the shaft was 12 feet from the ground, so he mounted a ladder, walked along a platform, and caught hold of the string. The only result to be expected followed: he was entangled by the shaft, carried round once, and then flung to the ground, but he escaped with a shaking only." The manner in which such an accident as this happened and the means, if any, for preventing similar ones are the important points to be considered, the fact that it was not a fatal one being purely non-essential and fortuitous.

The recklessness of the employé and his indifference to means provided to secure his safety where he considers that these means hamper him in his work or cast a reflection upon his dexterity are forcibly brought out in many reports of factory inspectors. The provision of guards to circular saws, to shafting, and to other machinery that can be fenced does not appear to be resisted by employers except to the extent of protests in some instances that their workmen will not appreciate or make use of the innovation. The inspectors, indeed, speak highly of the willingness of manufacturers to accept suggestions and to take steps for the safety of their workpeople, a willingness which is only reasonable considering that accidents impose upon them a heavy pecuniary liability. An omission made in some instances, however, by employers, and to which attention is drawn, is that of not properly instructing the workman in the fitting and using of the guard provided. Apart from such want of explanation and of vigorous insistence upon the use of protective apparatus, the position of the worker seems to be frequently that assigned to him by Mr. Shuter who, writing of the southern division of the kingdom, says: "A large percentage of the accidents are caused by the carelessness of the injured person or his mates, although the master has to stand the expense or inconvenience caused thereby. Valuable guards are often removed and never replaced until an accident happens, when they are pulled from under a bench, rusty and unfit for use. As a matter of fact, the greatest opposition to guards still comes from the men and not the masters." Similar conduct on the part of the workers is often observable in those dangerous operations not connected with machinery where the protection afforded involves a little trouble or inconvenience to the protected person. Respirators provided in dusty manufactures, even where white lead is the material handled, are either improperly worn or not at all (pp. 29, 170). The workmen are not averse to the introduction of costly exhaust machinery for the removal of the dust; it is the respirator for themselves which they resist and the proper wearing of which is difficult to enforce. The kind of respirator to be provided has no doubt to be considered, but that known as the "Ever Trusty" is used in the works of Messrs. Armstrong at Elswick even where exhaust machinery also is employed, and is spoken of by another firm as the only one which their men will wear without trouble and objection. The report of the medical inspector as to notified cases of industrial poisoning shows that in this respect there is a general tendency to improve. Lead poisoning has been notified in 1903 in 614 instances, as against 629 in 1902, 863 in 1901, 1058 in 1900, and 1258 in 1899, the white-lead industry supplying 109 cases, against 143 in 1902 and 189 in 1901. The diminished number of poisoning cases from white lead is satisfactory but it is somewhat counterbalanced by other cases due to the increase in the carriage-painting industry, where the rubbing-down of the dry coats of paint with sand-paper enables the lead to be absorbed, by the occurrence of lead poisoning in the manufacture of electrical accumulators, and by the desilvering of lead being now classed among "smelting operations" instead of among "other industries." Of phosphorus poisoning there was no case in 1903. Of arsenical poisoning there were five cases in 1903 and of mercurial poisoning eight, these numbers being the same as those of 1902 in both instances. Anthrax shows a substantial increase, from 38, the average of the three preceding years, to 47 in 1903. There were eight more cases of anthrax due to wool-sorting and wool-combing in 1903 than there were in 1902. An analysis of the reports on lead poisoning by the certifying surgeons is contained in the medical inspector's report and an appendix to the same document deals at some length with the cases of industrial anthrax reported in the past five years, 1899–1903. From this it is seen that anthrax from wool occurs round Bradford and in the northern districts, where the manufactures require wool from Asia Minor and Persia, and does not occur in the factories of Gloucestershire, Wiltshire, and Somerset, in which colonial wool principally is manipulated.

The report of the principal lady inspector and the medical inspector upon the work of the section of Industrial Hygiene at the International Congress of Hygiene and Demography at Brussels shows that the subjects discussed were Anchylostomiasis, Precautionary Measures against Lead Poisoning, and Industrial Fatigue, the principal interest being centred round the last. Reports on this subject by Dr. Zuntz and by Mademoiselle J. Joteyko, M.D., head of the Psychophysiological Laboratory at the University of Brussels, are appended to the main report. The latter suggests as a practical result of the physiological study of fatigue the administration of medical advice to young persons selecting work to which they may devote themselves, so as to prevent those physically ill-adapted for particular careers from embarking upon them only to find out the extent of their incapacity when it is too late. The whole subject is one of interest as a study and in its practical application may some day be of considerable importance to workers of all classes.

THE REPORT OF THE PRIVY COUNCIL UPON PHYSICAL DETERIORATION.

(*Concluded from p. 538.*)

VERY wisely, we think, the committee has appended to its report a summary of the recommendations which, with a view of remedying such evils as are known to exist, it has thought right to make. In so doing the committee expresses the hope that the facts and opinions which it has collected will have some effect in allaying the apprehensions of those who on insufficient grounds have made up their minds that progressive deterioration does prevail amongst the people generally. At any rate, the committee believes that its labours will result in giving matter for reflection to the thinking portion of the community and will induce them to await the taking of the necessary steps to secure a sufficiency of well-sifted and accurate information, for without this no useful conclusions on the general problem can be drawn.

Reverting to the fact established early in the inquiry that no statistical information exists which might form the basis of a *comparative* statement of the health and physique of the people generally the committee recommends that with a view of supplying this want for the future a permanent anthropometric survey should be organised in England as speedily as possible. In the first instance this survey should have for its object the periodical measurement of school-children, enlisting for this purpose the assistance of school-teachers and factory surgeons, supplemented by a small staff of skilled surgeons. Besides this a more comprehensive survey of the adult population might eventually be undertaken; but the committee is strong in the conviction that "the main attack should be on the youth of the country," and they therefore urge that every school child should be measured at the commencement of his or her educational course, the operation being repeated at subsequent stated intervals, and the particulars being reported in set form to a central bureau to be established for the purpose.

The committee further believes that in connexion with the

anthropometric survey an "advisory council" might with great advantage be brought into existence, representing the departments of the State within whose province questions fall touching the well-being of the people, with the addition of members nominated by the medical corporations. This advisory council should be charged with the duty not only of receiving and applying the information derived from the anthropometric survey and from the register of sickness,[1] the establishment of which as complementary to the survey has been advocated by a large number of scientific witnesses, but also of advising the Government on all legislative and administrative points concerning the public health in respect of which State interference might be expedient.

The public health is obviously a matter of the highest national concern and to the extent that local independence militates against its security must the principle of local government be subordinated to more important interests. The motive governing recent domestic legislation has been the devolution on local authorities of extensive powers. This is as it should be, but the committee strongly holds the opinion that an important function still remains for the central government as representing the nation at large—namely, that of watching the play of local administration and of bringing influence to bear on backward districts with a view of levelling them up to a satisfactory standard. The committee ventures to doubt whether this latter consideration has received the prominence it deserves. The mass of routine work in which the Local Government Board is immersed affords little time for the consideration of questions of public policy in the sphere of health and may conceivably render it slow to assume the responsibility of applying new methods of administration. Nevertheless, it is in these directions more particularly that opportunities for improvement lie and the committee is of opinion that the Board would find in the knowledge and stimulus of such an advisory council a most useful auxiliary.

With regard to the primary causes of the physical deterioration which undoubtedly prevails in many places among the slum population, examination of the voluminous evidence collected in the second part of the report indicates clearly that these have their origin mainly, at any rate, in the conditions of life which obtain throughout infancy and childhood. The committee adopts this view and accordingly devotes a large portion of its report to a critical discussion of this particular point. Thus the committee proceeds to remark that among the more highly organised nations where the tendency to a decrease in the birth-rate becomes more or less noticeable the means by which excessive infantile mortality can be averted present a social problem of the first importance. Unfortunately, in the volume of vital statistics from which so many consolatory reflections are drawn infant mortality remains a dark page. Dr. John Tatham has prepared for the information of the committee a series of special statistics respecting infantile mortality in various parts of England and Wales at two quinquennial periods a quarter of a century apart. The statistical tables, six in number, appear in their present comprehensive form, we believe, for the first time. They show the mortality among male and female infants separately, (*a*) in town, as distinguished from the country, and (*b*) among legitimate, as distinguished from illegitimate, infants. Dr. Tatham has also prepared an instructive analysis of the tabular matter which, bearing the sanction of authority, has enabled the committee to form definite conclusions on a subject which is admittedly of the first importance, but with respect to which it appears to have been impossible to derive satisfactory testimony from any of the witnesses examined. Considerations of space prevent our printing this necessarily detailed analysis in full; it will, however, be found, together with the tables referred to, in the appendix to the first volume of the report. The committee draws attention to three facts that stand out prominently as the result of Dr. Tatham's investigation: first, that infantile mortality in this country has not decreased materially during the last 25 years, notwithstanding that the death-rate at other ages has fallen considerably; secondly, that the mortality among illegitimate children is enormously greater than among children born in wedlock; and thirdly, that about one-half of the mortality occurs in the first three months of life.

What, then, are the causes responsible for the terrible waste of infant life which according to the evidence adduced is still going on, especially in the great centres of manufacturing industry? A glance at the report furnishes a ready answer to this question. We should not be far wrong if we ascribed it, speaking generally, to a combination of ignorance and indolence on the part of mothers. That this is the case may be gathered from the following amongst other similar evidence. A witness, speaking with regard to Dundee, told the committee that it is quite a common thing to find a woman who has had as many as 13 children and has lost 11 or 12 of that number, in some cases the whole of them. Another witness (this time an official) from Sheffield said: "One woman I know has buried 17 out of 18 children, another has had 16 sons, of whom only six are living." Nor, in the witness's opinion, is this waste necessarily connected with poverty. Deaths from diseases of the respiratory organs constantly occur owing to the practice, even among well-to-do mothers, of exposing imperfectly clad infants to cold whilst they themselves are gossiping with their neighbours. It was definitely ascertained from several mothers in Hanley and Longton in Staffordshire that about one-third of the children born to them had died in infancy and in many Lancashire towns the state of matters is certainly no better. Thus, in Burnley, one woman is said to have had 20 children and to have buried 16 of them—all of the latter having died between the ages of one and 11 months; in this case the father was earning good wages and the mother stayed at home.

With regard to the degree in which the condition of the infant at birth determines his or her subsequent expectation of life and of working power the committee has been careful to obtain the opinion of the most competent witnesses. And, first, with respect to hereditary taint. Professor D. J. Cunningham, whilst subscribing to the opinion that such diseases as syphilis and alcoholism transmit their effects to the third and even the fourth generation, adhered firmly to the view that inferior bodily characters, the result of poverty and not of vice, are not transmissible from parent to offspring. He says: "In spite of the marked variations which are seen in the physique of the different classes of the people of Great Britain anthropologists believe, with good reason, that there is a mean physical standard which is the inheritance of the people as a whole, and that no matter how far certain sections of the people may deviate from this by deterioration this tendency of the race as a whole will always be to maintain the inherited mean." Dr. A. Eichholz went further and in order to discuss more closely the question of heredity recalled a medical factor of supreme importance—viz., the small percentage of unhealthy births among the poor, even down to the very poorest. The number of children born healthy even in the worst districts is very great. The exact number has never been determined owing to the uncertainty on the point which exists among medical men, but it would seem to be not less than 90 per cent. Dr. Eichholz has sought confirmation of this view from medical colleagues in public work—e.g., public health, Poor-law, Factory Acts, education, and in private practice in poor areas, and has also consulted large maternity charities, and has always been strengthened in this view. In no single case, he says, has it ever been asserted that ill-nourished or unhealthy babies are more frequent at the time of birth among the poor than among the rich or that hereditary diseases affect the newly-born of the rich and poor unequally. The poorest and most ill-nurtured women bring forth as hale and strong-looking babies as those in the very best conditions. In fact, it almost appears as though the unborn child fights strenuously for its own health at the expense of the mother and arrives in the world with a full chance of living a normal physical existence. From this it would appear to follow that nature gives every generation a fresh start. In the same strain was the evidence of Dr. E. Malins, President of the Obstetrical Society of London and professor of midwifery in the University of Birmingham. This witness thought that the testimony of experienced observers would be in accordance with the views expressed by Dr. Eichholz, though perhaps hardly to the same extent. Dr. Malins thought that from 80 to 85 per cent. of children were born physically healthy, whatever the condition of the mother might have been antecedently. The weight of children at birth is generally not below the average; the average keeps up very much, no matter what the physical condition of the mother may be for the time.

Upon one point there appears to be practical unanimity

[1] Further details respecting this register of sickness will be found in our notice of the Registrar-General's report in THE LANCET of August 27th, p. 634.

among scientific witnesses—namely, that most of the suffering and premature death that beset infantile existence are the result of improper feeding, especially in the earlier months of life. Thus Professor Cunningham, in the course of his evidence, says that in large part the heavy mortality during infancy is accounted for by the fact that a child is nowadays seldom fed from the breast. Children are fed upon skimmed milk, starchy trash, and all sorts of abominations. It is not, perhaps, that the parents are unable to get better food but it is owing to the absolute ignorance of the mother as to the proper kind of food to give. That will be found to be an opinion almost universal amongst those who have any knowledge of the subject. According to the most trustworthy testimony artificial feeding does not seem to have been heard of in England before the seventeenth century. Dr. R. Hutchison, referring to the undoubted fact that mothers now-a-days feed their children from the breast much less frequently than formerly, seems to regard it as due to an increasing disability on their part to fulfil that natural maternal function. "It is not fair," he says, "to say that it is due either to laziness or even in the case of the lower orders to the strong desire of the women to get back to work. All the motives work the other way. The chief object of a working-class woman should be to feed her own child; first, it is more economical and, secondly, it prevents subsequent pregnancies, which is a thing they are often very anxious to do. So that really when they do not feed their own child you may be perfectly certain that it is very rarely *because they will not* among the working classes. In the upper classes it may be because they will not trouble. I am certain, in regard to the lower classes *it is because they cannot*. I always correlate that with the birth-rate; they go together. The Jewish women in the East-end almost always feed their children at the breast and they are people with a large number of children; they seem to have greater reproductive powers. I think," he adds, "that the capability of having a large number of children and the capability of nursing them are two things which are in some way related." As regards the substitutes for milk which are most desirable for young children very abundant testimony will be found in the report but the subject is too large for us even to touch upon here.

With a view to the protection of infant life the committee makes certain recommendations which will, we trust, have due weight in the proper quarters. In the first place, it is expedient that the registration laws should be strengthened so as to provide that all stillbirths should be registered and that no child, or for that matter any other person, should be buried in the absence of a medical certificate of the cause of death. Every witness examined was strongly in favour of this amendment of the law as the best means of bringing home to careless parents the consequences of culpable neglect. In the second place, the occupation of all mothers, whether married or single should be registered at the time of registering the birth of the child. (At present the occupation of the mothers of illegitimate children alone is registrable by law.) And, thirdly, infantile mortality should be systematically localised for particular industrial areas and infantile death-rates from various causes should be published for the principal occupations throughout the country.

A COOPERATIVE CONVALESCENT HOME.—Chevin Hall, Otley, Yorkshire, has been opened as a coöperative convalescent home, the premises having been purchased by the North-Western Coöperative Convalescent Homes Association, Limited. The hall is situated on Otley Chevin, one of the highest hills in Wharfedale, and is 700 feet above sea level.

BLIND OBEDIENCE TO A QUACK.—A note to the *Novosti* from Orla, Russia, says that a native of a neighbouring village was sick and he applied to a travelling quack who prescribed for him a course of forty days and forty nights continuously in a mud bath, he having to keep himself well covered all the time with the mud. The patient began to conform scrupulously with the order and rejected the advice of his friends who, seeing his sufferings, sought to get him away. They were ultimately compelled to remove him by force but he died in great pain three days afterwards.

THE BRITISH ASSOCIATION.

MEETING AT CAMBRIDGE.

THE SECTIONS.

ANTHROPOLOGY.

Professor ALEXANDER MACALISTER, F.R.S., occupied the chair.

Professor G. E. ELLIOT SMITH contributed a paper on the Persistence in the Human Brain of certain Features usually supposed to be distinctive of Apes. This paper, which was read by Mr. W. L. H. DUCKWORTH in the unavoidable absence of the author, was founded on the study of a large series of simple human brains belonging to various lowly (chiefly African) peoples. It was especially in the occipital region of the cerebral hemisphere that the supposed distinctively simian characters were most exactly reproduced. This was due to the fact that the cortical area especially concerned with the reception of visual impulses was as well developed in the anthropoid apes as in man. The form of this visual area in the human brain was often greatly distorted, in an almost purely mechanical way, by the enormous increase in the size of the cortical area in front of it; but however much its shape in man might differ from that of the apes its structure was identical. It was a most curious fact that the simian resemblance was much more often retained in the left than in the right occipital region. The reason for this was that the visual centre retracted towards the mesial surface to a distinctly greater degree on the right than the left side of most human brains; it was pushed backward, as it were, by a very great and quite a symmetrical expansion of the right inferior parietal region. This asymmetry of the brain often exercised an obvious influence on the shape of the cranium. Although large "Affenspalten" might occur in people of various races they were rarely symmetrical in the two hemispheres, except in the negro races. In this, as well as in many other features, the negro brain was distinctly more pithecoid than the brains of any other people known to the writer.

Mr. DUCKWORTH read a note on the Brain of a Fœtal Gorilla. When exposed no sulci were observed in the lateral aspects of the cerebrum; shortly after the first exposure a cleft was formed in the left hemisphere. But the interest of the case really centred in the appearance presented by the mesial aspect of the left hemisphere. Two important sulci were to be seen. That which was more anterior in situation corresponded to the "Bogenfurche" of His; the second and more posterior sulcus seemed to represent the calcarine or possibly the paracalcarine element. The principal problem was whether the sulci were natural or simply due to decomposition. In the human cerebrum it was generally conceded that the "Bogenfurche" is an artificial product, though Mr. Duckworth believed that His did not admit this.

Mr. DUCKWORTH also read a paper on the Graphical Representation of the Various Racial Human Types, in which he reviewed the methods of representation devised by Keane, Flinders Petrie, Thomson, and Stratz. He proposed to adopt the simile of a protoplasmic organism with processes corresponding to the several morphological types. The communication was illustrated by diagrams.

Professor MACALISTER exhibited a series of Amorite Crania from the excavations made at Gaza by the Palestine Exploration Fund, representing the ethnology of the third and fourth strata, and for comparison some from the tombs of the last stratum of the Maccabean age. As the peoples of the first and second strata practised cremation skulls from these strata, therefore, were not included in the series.

Mr. R. B. SEYMOUR SEWELL read a paper on Some Variations in the Astragalus. The bones examined numbered upwards of 1000 and were mainly of Egyptian origin. As regards the angles which the collum makes with the corpus these specimens were intermediate between the Europeans and the anthropoid apes.

Mr. P. C. LAIDLAW read a paper on Some Varieties of the Os Calcis. He said that the variability of the processus trochlearis seemed to show that it was not developed from a separate ossicle, as Professor Pfitzner suggested. With regard to the external plantar tubercle he said that its variations in

man, its absence in the anthropoids, its probable development, and the anatomy of the soft parts in man and the chimpanzee showed that it was a structure developed for the more ready maintenance of the upright position. The projection of the heel was more limited in Europeans than in the ancient Egyptians owing to backward extension of the fascia articularis posterior.

Mr. J. GRAY read a paper entitled "Anthropometric Identification: a New System of Classifying the Records." He said that the weak point of the Bertillon system of anthropometric identification was the method of classifying the records. The records were subdivided four times into three groups, each group lying between fixed limits of four different dimensions. The cards on which the records were written were stored in a cabinet containing 81 drawers, each one of which contained all cards between specified limits. The process of identification consisted in finding the drawer between whose limits the person to be identified lay. There might be considerable difficulty in finding the required drawer if the dimensions of the person to be identified lay near the margin of limits in one or more dimensions. Dr. J. G. Garson, in working the Bertillon system at Scotland Yard Police Office, London, found that only 61 per cent. of the identifications were made by one search. To get over this difficulty it was proposed to abolish fixed subdivisions. If the complete dimensions of each individual were written on a single card these cards would be arranged according to the first dimension as in a card catalogue. When it was wished to ascertain whether a person who had just been measured had already a record card in the register two limits were formed by adding to and subtracting from one of the measurements an amount equal to the extreme variation likely to occur in measurement. All the cards between the limits thus found were then taken out and the required card, if present, must be in this packet of cards. The cards in this packet were now rearranged according to some other measurement, having a small amount similarly added and subtracted. If a sufficient number of dimensions were taken only one card would be left after the final separation if the record of the person to be identified was present. By this system the effects of considerable inaccuracy in measurement could be neutralised by measuring a large number of dimensions. In no case was more than one search necessary to determine whether the record of the person measured was present in the register or not. This system of classification would probably remove the chief objection to the Bertillon system, which was otherwise much superior to the finger-print system, for in the latter the uncertainty at the margins of groups was very great.

A committee consisting of Professor A. MACALISTER, Dr. C. S. MYERS, Sir JOHN EVANS, and Professor D. J. CUNNINGHAM presented a report on Anthropometric Investigations among the Native Troops of the Egyptian Army. The cards of the 1005 Egyptian fellahin measured during the year 1901–02 in Egypt and the Soudan had been sorted into provinces and their measurements had been carefully copied out and collated, province by province, ready for publication. The cephalic and nasal indices had been determined wherever possible for each individual. The Copts had been considered separately from the Mahommedan population. Such data had great biological interest, seeing that the anthropometric material now available from Egypt covered a range of some 7000 years. It was probable that the homogeneity of the Upper Egyptians had not been seriously disturbed during that period; but this conclusion could not be regarded as certain until the variability of other measurements had been similarly studied. The greater variability of Theban mummies would be easily explicable on the ground of racial impurities in so famous and populous a city as ancient Thebes.

Dr. MYERS read a paper on the Variability of Modern and Ancient Peoples. He said that it had been generally supposed that modern peoples deviated more widely than ancient peoples from their respective means. His investigations upon the Egyptian fellahin, however, gave no support to this supposition, alike in the length, breadth, and horizontal circumference of the head and in the cephalic index. So, too, the variability in cephalic index of ancient Bavarian skulls was found to be almost identical with that of the modern Bavarian population; and the variability of the cephalic index in modern French and English did not exceed, but was probably less than, that in ancient Gaulish and British skulls respectively.

Mr. F. G. PARSONS read a paper on Facial Expression. He pointed out the untrustworthiness of a superficial judgment of the physiognomy and illustrated the point by reference to portraits of Judge Jeffreys and General Wolfe respectively. He then proceeded to consider the relation of the chief lines of expression to the subcutaneous muscles of expression and concluded by expressing his belief that in spite of the abuse of physiognomical studies in the past there was still hope that systematic research would be productive of sound and even brilliant results. Illustrations were drawn from a series of portraits in the National Gallery.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8659 births and 5999 deaths were registered during the week ending August 27th. The annual rate of mortality in these towns, which had been 19·8, 22·1, and 22·7 per 1000 in the three preceding weeks, declined again to 20·5 per 1000. In London the death-rate was 18·9 per 1000, while it averaged 21·2 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 7·7 in Hornsey, 10·2 in South Shields, 11·0 in Blackburn, 11·1 in Halifax, 11·3 in Bournemouth, 12·0 in West Hartlepool, 12·5 in Southampton and in King's Norton, and 12·7 in Coventry; while the highest rates were 27·2 in East Ham, 27·3 in Rhondda, 29·3 in Plymouth, 29·4 in Liverpool, 29·5 in Birkenhead, 30·4 in Bootle, 31·6 in Wigan, 31·8 in Hanley, and 33·5 in Salford. The 5999 deaths in these towns included 2291 which were referred to the principal infectious diseases, against 2059, 2710, and 2842 in the three preceding weeks; of these 2291 deaths, 1984 resulted from diarrhœa, 126 from measles, 83 from whooping-cough, 45 from diphtheria, 32 from scarlet fever, 19 from "fever" (principally enteric), and 2 from small-pox. The lowest death-rates from these diseases were recorded in Hornsey, Hastings, Brighton, Bournemouth, Oldham, Blackburn, Halifax, West Hartlepool, and South Shields; and the highest rates in East Ham, Walthamstow, Walsall, Birkenhead, Liverpool, Bootle, Salford, York, and Hull. The greatest proportional mortality from measles occurred in Plymouth, Hanley, Walsall, West Bromwich, Grimsby, Birkenhead, Liverpool, Bootle, Salford, Huddersfield, and Rhondda; from scarlet fever in Northampton, Hanley, and Barrow-in-Furness; from whooping-cough in Great Yarmouth and St. Helens; and from diarrhœa in East Ham, Walthamstow, Walsall, Liverpool, Bootle, Salford, York, and Hull. The mortality from diphtheria and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Bury and one in Salford, but none in any other of the 76 towns. The number of small-pox patients remaining under treatment in the Metropolitan Asylums hospitals, which had been 32, 21, and 18 at the end of the three preceding weeks, had further declined to 13 on August 27th; no new case was admitted during the week, the numbers being 2, 0, and 2 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday, August 27th, was 1781, against 1758, 1763, and 1745 on the three preceding Saturdays; 263 new cases were admitted during the week, against 166, 189, and 198 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 112, 121, and 106 in the three preceding weeks, further declined to 101 and were 13 below the number in the corresponding period of last year. The causes of 49, or 0·8 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Bradford, Newcastle-on-Tyne, and in 47 other smaller towns; while the largest proportions of uncertified deaths were registered in Aston Manor, Liverpool, Preston, Sheffield, South Shields, and Gateshead.

In 76 of the largest English towns 8109 births and 5335 deaths were registered during the week ending Sept. 3rd. The annual rate of mortality in these towns, which had been 22·1, 22·7, and 20·5 per 1000 in the three preceding weeks, further declined last week to 18·2 per 1000. In London the death-rate was 16·4 per 1000, while it averaged 19·0 in the 75 other large towns. The lowest death-rates in these towns

were 6·4 in Hornsey, 7·8 in King's Norton, 8·2 in Derby, 11·0 in Blackburn, 11·1 in Southampton, 11·6 in Halifax, 12·0 in Smethwick, and 12·3 in Croydon; while the highest rates were 26·3 in Stockport and in Hull, 26·6 in Salford, 27·2 in Liverpool, 27·4 in Plymouth, 27·5 in Middlesbrough, 28·5 in Hanley, and 28·7 in Bootle. The 5335 deaths in these towns last week included 1636 which were referred to the principal infectious diseases, against 2710, 2842, and 2291 in the three preceding weeks; of these 1636 deaths, 1351 resulted from diarrhœa, 91 from whooping-cough, 83 from measles, 39 from diphtheria, 38 from "fever" (principally enteric), 31 from scarlet fever, and three from small-pox. The lowest death-rates from these diseases were recorded in Hornsey, Hastings, Southampton, Handsworth (Staffs.), King's Norton, Derby, Blackburn, Barrow-in-Furness, Huddersfield, and Halifax; and the highest rates in Grimsby, Hanley, Liverpool, Bootle, Wigan, Warrington, Burnley, York, Hull, and Middlesbrough. The greatest proportional mortality from measles occurred in Plymouth, Bootle, Manchester, and Salford; from diphtheria in Rochdale; from whooping-cough in Norwich, Burton-on-Trent, Grimsby, and Merthyr Tydfil; from "fever" in Ipswich; and from diarrhœa in Hanley, Stockport, Liverpool, Bootle, Wigan, Warrington, York, Hull, Middlesbrough, and Newport (Mon.). The mortality from scarlet fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Warrington, one in Preston, and one in Gateshead, but none in any other of the 76 large towns. The Metropolitan Asylums Hospitals contained nine small-pox patients at the end of last week, against 21, 18, and 13 at the end of the three preceding weeks; two new cases were admitted during the week, against two and none in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1763, 1745, and 1781 on the three preceding Saturdays, had further risen to 1819 on Saturday last, Sept. 3rd; 266 new cases were admitted during the week, against 189, 198, and 263 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 121, 106, and 101 in the three preceding weeks, rose again last week to 108, and were 15 below the number in the corresponding period of last year. The causes of 39, or 0·7 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 48 other smaller towns; the largest proportions of uncertified deaths were recorded in West Bromwich, Liverpool, St. Helens, Wigan, Preston, Halifax, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·6, 15·7, and 17·1 per 1000 in the three preceding weeks, declined again to 16·2 per 1000 during the week ending August 27th, and was 4·3 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·0 in Leith and 11·4 in Aberdeen, to 17·2 in Dundee and 17·5 in Glasgow. The 537 deaths in these towns included 56 which were referred to diarrhœa, 24 to whooping-cough, 10 to measles, four to scarlet fever, two to "fever," and one to diphtheria, but not any to small-pox. In all, 97 deaths resulted from these principal infectious diseases, against 85, 109, and 94 in the three preceding weeks. These 97 deaths were equal to an annual rate of 2·9 per 1000, which was 4·9 per 1000 below the mean rate during the same period in the 76 large English towns. The fatal cases of diarrhœa, which had been 48, 68, and 66 in the three preceding weeks, declined again to 56, of which 37 occurred in Glasgow, eight in Edinburgh, three in Dundee, two in Paisley, two in Leith, and two in Greenock. The deaths from whooping-cough, which had been 26, 26, and 16 in the three preceding weeks, rose again to 24, and included 17 in Glasgow, four in Edinburgh, and two in Paisley. The fatal cases of measles, which had been five, six, and seven in the three preceding weeks, further rose to ten, of which four were registered in Edinburgh, two in Glasgow, and two in Greenock. The four deaths from scarlet fever corresponded with the number in the preceding week and included three in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 47, 39, and 47 in the three preceding weeks, further rose to 55, and were slightly in excess of the number in the corresponding period of last year. The causes of 17, or more than 3 per cent., of the deaths in these eight towns were not certified.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·7, 17·1, and 16·2 per 1000 in the three preceding weeks, further declined to 16·0 per 1000 during the week ending Sept. 3rd and was 2·2 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·2 in Perth and 11·7 in Leith to 18·0 in Greenock and 18·6 in Glasgow. The 530 deaths in these towns included 58 which were referred to diarrhœa, 26 to whooping-cough, six to "fever," four to measles, four to diphtheria, one to small-pox, and one to scarlet fever. In all, 100 deaths resulted from these principal infectious diseases last week, against 109, 94, and 97 in the three preceding weeks. These 100 deaths were equal to an annual rate of 3·0 per 1000, which was 2·6 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 68, 66, and 56 in the three preceding weeks, rose again last week to 58, of which 34 occurred in Glasgow, nine in Aberdeen, seven in Dundee, four in Paisley, and two in Greenock. The deaths from whooping-cough, which had been 26, 16, and 24 in the three preceding weeks, increased to 26 last week and included 16 in Glasgow, three in Edinburgh, and three in Dundee. The six fatal cases of "fever" were four in excess of the number in the preceding week and included three in Edinburgh and two in Glasgow. The deaths from measles, which had been six, seven, and ten in the three preceding weeks, declined again last week to four, of which three were registered in Glasgow. The fatal cases of diphtheria, which had been five, one, and one in the three preceding weeks, rose again to four last week, and included two in Glasgow where the death from small-pox also was registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 39, 47, and 55 in the three preceding weeks, declined again last week to 53 and were slightly below the number in the corresponding period of last year. The causes of 19, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·2, 27·1, and 24·5, per 1000 in the three preceding weeks, further declined to 23·5 per 1000 during the week ending August 27th. During the past four weeks the death-rate has averaged 24·1 per 1000, the death-rates during the same period being 20·4 in London and 15·2 in Edinburgh. The 171 deaths of persons belonging to Dublin registered during the week under notice showed a decline of seven from the number in the preceding week and included 49 which were referred to the principal infectious diseases, against 25, 46, and 43 in the three preceding weeks; of these, 35 resulted from diarrhœa, seven from measles, four from whooping-cough, one from scarlet fever, one from diphtheria, and one from "fever," but not any from small-pox. These 49 deaths were equal to an annual rate of 6·7 per 1000, the death-rates from the same diseases being 6·3 in London and 2·7 in Edinburgh. The fatal cases of diarrhœa, which had been 33 in each of the two preceding weeks, increased to 35. The deaths from measles, which had been three, five, and four in the three preceding weeks, rose again to seven. The fatal cases of whooping-cough, which had been four, four, and three in the three preceding weeks, rose again to four. The 171 deaths in Dublin included 64 among children under one year of age and 32 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons were slightly in excess of the respective numbers recorded in the preceding week. Four inquest cases and two deaths from violence were registered; and 62, or more than a third, of the deaths occurred in public institutions. The causes of five, or nearly 3 per cent., of the deaths registered in Dublin last week were not certified.

The death-rate in Dublin, which had been 27·1, 24·5, and 23·5 per 1000 in the three preceding weeks, further declined to 19·9 per 1000 during the week ending Sept. 3rd. During the past four weeks the death-rate has averaged 23·8 per 1000, the rates during the same period being 19·6 in London and 14·7 in Edinburgh. The 145 deaths of persons belonging to Dublin registered during the week under

notice showed a decline of 26 from the number in the preceding week, and included 29 which were referred to the principal infectious diseases, against 46, 43, and 49 in the three preceding weeks; of these, 26 resulted from diarrhœa, one from measles, one from whooping-cough, and one from "fever," but not any from small-pox, scarlet fever, or diphtheria. These 29 deaths were equal to an annual rate of 4·0 per 1000, the death-rates last week from the principal infectious diseases being 4·5 in London and 1·3 in Edinburgh. The fatal cases of diarrhœa, which had been 33, 33, and 35 in the three preceding weeks, declined again last week to 26. The 145 deaths in Dublin last week included 51 among children under one year of age and 29 among persons aged 60 years and upwards; the deaths of infants showed a considerable decline, while those of elderly persons were but slightly fewer than the number in the preceding week. Seven inquest cases and five deaths from violence were registered; and 39, or more than a fourth, of the deaths occurred in public institutions. The causes of three, or more than 2 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. Kidd to the *Vivid*, for Pembroke Dockyard; R. F. Bowie to the *President*, for three months' hospital course; and J. Menary, to the *Good Hope*. Staff Surgeon J. C. Wood to the *Diana*, on commissioning. Surgeons: C. H. Rock to the *Diana*, on commissioning; H. Chater to the Royal Marine Division, Forton; H. R. H. Denny to the *Thames*, for the *Forth*; D. V. Lowndes to the *Terror*, to assist the Fleet Surgeon of Bermuda Dockyard; F. C. B. Gittings to the *Hannibal*; C. J. E. Cock to the *Pembroke*, additional; J. R. Muir to the *Implacable*; A. H. Prichard to the *Scalark*; and E. O. B. Carbery to the *Vernon*.

Fleet Surgeon Henry Anthony Wills Richardson has been placed on the Retired List at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

ROYAL ARMY MEDICAL CORPS.

Captain J. L. Jones will embark for Ceylon in November. Captain N. H. Rose has been transferred from the Mhow to the Aden District, and Captain J. Tobin from the Bombay to the Mhow District. Major W. C. Beevor, C.M.G., has embarked for India. Captain A. C. Lupton has arrived in the Home District for duty. Lieutenant E. C. Whitehead has assumed temporary medical charge of the women and children, Marlborough Lines, Aldershot. Lieutenant-Colonel W. L. Reade will soon embark for Madras. Major H. C. Thurston, C.M.G., to be a Deputy-Assistant Director-General, vice Lieutenant-Colonel E. M. Wilson, C.B., C.M.G., D.S.O., R.A.M.C., who has resigned that appointment. Lieutenant F. M. M. Ommanney is seconded for service under the Foreign Office. Lieutenant J. A. Longley, from the Seconded List, to be Lieutenant.

The undermentioned gentlemen to be Lieutenants on probation: William Byam, Charles Ryley, Harry Theodore Wilson, Lionel Victor Thurston, Walter Hyde Hills, Patrick Dwyer, Phillip Claude Tresilian Davy, John Forbes Cook Mackenzie, Arthur William Gater, George Alfred Duncan Harvey, Harold Charles Winkworth, James Campbell, Richard Collis Hallowes, Harry William Russell, George Richard Paintou, Meurice Sinclair, Evelyn John Hansler Luxmoore, Kenneth Alan Crawford Doig, Herbert Owen Marsh Beadnell, Herbert St. Maur Carter, Robert Harry Lucas Cordner, John Patrick Lynch, Alastair Norman Fraser, Nelson Low, Percy Arnold Jones, Cecil Roy Millar, Augustine Thomas Frost, George Herbert Richard, Harry Christopher Sidgwick, and John St. Aubyn Maughan.

The undermentioned Lieutenants are seconded under the provisions of Article 349 of the Pay Warrant:—W. Byam and H. St. M. Carter.

INDIAN MEDICAL SERVICE.

Colonel G. D. N. Leake, R.A.M.C., Colonel F. W. Trevor, R.A.M.C., and Colonel G. J. Kellie, I.M.S., have been appointed Principal Medical Officers of Oudh, Bombay, and Derajat districts. Lieutenant-Colonel A. W. P. Inman, R.A.M.C., is acting as Principal Medical Officer, Allahabad district. On August 18th Captain Kelly and Captain A. W. C. Young, I.M.S., attached to the mission in Tibet were attacked by a lhama at the camp entrance. Captain Kelly was wounded slightly in the hand and Captain Young was wounded severely in the head.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Kent: Sanderson Mellor, late Lieutenant, 6th West Riding of Yorkshire Rifle Volunteer Corps, to be Surgeon-Lieutenant.

Rifle: 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers: Supernumerary Surgeon-Lieutenant G. R. Livingston to be Surgeon-Captain and to remain Supernumerary. 4th (Donside Highland) Volunteer Battalion the Gordon Highlanders: Samuel George Davidson, late Surgeon-Lieutenant, to be Lieutenant.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The London Companies: Major T. H. Openshaw, C.M.G., resigns his commission, with permission to retain his rank and to wear the prescribed uniform. The Woolwich Companies: Lieutenant W. H. Payne to be Captain.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major J. P. Atkinson having attained the prescribed limit of age is removed from the Army Medical Reserve of Officers. Surgeon-Lieutenant A. H. L. Stewart, 2nd County of London Imperial Yeomanry, to be Surgeon-Lieutenant.

THE MILITARY OPERATIONS IN SOMALILAND.

Despatches relative to the military operations in Somaliland are published in the *London Gazette* of Sept. 2nd. Brigadier-General W. H. Manning, who commanded the force from November, 1902, to July, 1903, mentioned that Lieutenant-Colonel J. F. Williamson, C.M.G., R.A.M.C., "as principal medical officer has efficiently organised the medical arrangements of the Somaliland field force under conditions of peculiar difficulty." Lieutenant-General Sir C. C. Egerton, who commanded the force from July, 1903, to the conclusion of the operations in May, 1904, includes among the officers whom he "recommended for special consideration" Colonel J. F. Williamson, C.M.G., R.A.M.C. (the principal medical officer), Captain Albert Ernest Hamerton, R.A.M.C., and Captain Corrie Hudson, I.M.S. In the list of officers "whose good work it is desired to bring to notice" he included Captain S. de C. O'Grady, R.A.M.C., Captain F. L. Blenkinsop, I.M.S., and Major F. W. Gee, I.M.S. Colonel A. N. Rochfort in his report on a portion of the operations made special mention of Major J. W. Jennings, D.S.O., R.A.M.C. Colonel John Francis Williamson, C.M.G., R.A.M.C., has been appointed an ordinary member of the military division of the third class, or Companion, of the Bath. Captain Corrie Hudson, I.M.S., Captain Albert Ernest Hamerton, R.A.M.C., and Lieutenant James Henry Horton, I.M.S., have been appointed to be Companions of the Distinguished Service Order.

DEATHS IN THE SERVICES.

Deputy-Surgeon-General John Henry Beath, M.D., C.B., in his seventieth year, at Stirling. He was a son of the late Dr. Andrew Beath of Stirling, and studied medicine at the University of Edinburgh, where he graduated as M.D. in 1857 and in the same year received an appointment on the medical staff and served on it during the Indian Mutiny, being present at the siege and capture of Lucknow. In 1859 he joined the 3rd Foot (The Buffs) and was with his regiment in the China war of 1860, where he was present at the taking of the Tanghu and Taku forts, for which he received the medal with clasp. His foreign service extended over 14 years, his last campaign being the Egyptian expedition in 1882, after which Queen Victoria honoured him with the Companionship of the Order of the Bath and gave him permission to accept and to wear the insignia of the Order of the Medjidieh which the Khedive had conferred upon him. In December, 1882, he was placed on retired pay. For nine years he acted as medical officer of the double battalion depôt at Hamilton, near Glasgow, and afterwards for ten years he held the garrison appointment in his native town of Stirling, from which appointment, owing to failing health, he retired only two years ago.

Major George Brooke French, I.M.S., at Tunbridge Wells recently. He received his medical qualifications in 1885 and served with the Manipur expedition in 1891, obtaining a medal with clasp in recognition of his services.

THE WAR IN THE FAR EAST.

There is no need for us to dwell upon the stupendous events that have been taking place in the Far East, for so far as these are known they have, as a matter of course, occupied a very prominent position in the daily press of this country and of Europe and America. Where a war is being conducted on such an enormous scale and where the events are occurring with such dramatic rapidity and involve such great issues as in the present case it follows that all the attention is focussed on the military operations and their results. The medical aspects of the campaign not only sink into insignificance but there is no time to form even any approximately correct estimate of the casualties, much less to record any surgical or medical observations. There has been almost continuous fighting for the last eight or nine days and for the best part of that time of a very fierce kind. It has been often carried on, too, by troops suffering from want of food and water. It is therefore no wonder that, as we have been told, the limits of human endurance had been reached on such occasions on the part of the exhausted belligerents of both sides. Considering the severe character of the fighting and the size of the armies engaged, the titanic nature of the struggle, and the rapid succession of the engagements it is certain that the number of killed and wounded on both sides must have been unusually great and have subjected the medical and transport services to the greatest strain. The best organisation and skill in the world would be temporarily overwhelmed with the magnitude of the task of even stripping the battlefields of their wounded, let alone attending to them. Happily, under the medical system of modern war but little requires to be done at once for them. The new methods of treatment recognise that the principle of *noli me tangere* is the best and truest that can be adopted in the interest of the wounded soldier. The less done for him beyond the simple application of a first antiseptic dressing the better until he can be removed to some hospital in the rear of the fighting line where his wounds can be once and for all properly examined and treated. All medical officers are agreed on this point and, as we know, those of the Japanese medical service are fully alive to it. The Russians have a large and well-organised medical and nursing service, largely augmented by philanthropic and charitable organisations, and as far as the Japanese are concerned their medical and nursing services are excellent and highly trained. The Japanese Red Cross Society is admirably organised and has in time of war four well-equipped hospital ships at its disposal.

A PORTABLE HOSPITAL FOR THE RUSSIAN ARMY.

The secretary of the Danish Consulate General in St. Petersburg in presence of the military wounded transport committee exhibited a portable hospital for twenty men which has just been acquired for the Red Cross Society from a Danish firm. When dismounted the hospital occupies very little space and is easily moved great distances. Mounted, it consists of a wooden frame clad with corrugated iron, dressed with fire-proof paper and fibrous material. Between the inner and outer surfaces of the walls there is an air space to assist in maintaining an equal temperature, the floor and the roof being similarly made. The heating is effected with portable stoves, the makers guaranteeing an interior temperature of 60° F. even during very severe frost. The furniture is light and the invalids may be carried on the spring beds of the establishment if so desired. The two wings of the house contain 10 beds each and the centre accommodates nurses, medical men, and baths. The *Novoe Vremya* adds that the committee expressed its satisfaction with the combination.

THE RUSSIAN MEDICAL SERVICE IN THE FAR EAST.

It is proposed to construct several hospitals for the treatment of Russian soldiers who have become insane during the war. There will be one containing 25 beds at Kharbin, one containing from 30 to 50 beds at Nertchinsk, and one station each at Krasnoyarsk and Omsk. At Kharbin there will be a senior medical officer with four juniors and six army surgeons, at Nertchinsk two medical officers and four army surgeons, and at each of the other two stations one medical officer.

305 additional reserve army surgeons have just been sent to the theatre of war from Moscow. They will be distributed amongst the hospitals of Chabarovsk, Kharbin, and Mukden.

Correspondence.

"Audi alteram partem."

HEREDITY.

To the Editors of THE LANCET.

SIRS,—Dr. J. Beard of Edinburgh, whose speech on Heredity in the proceedings of the Section of Psychological Medicine is reported in THE LANCET of August 20th, pp. 535-536, takes exception in a letter[1] to the accuracy of the report in the first place and to the length of certain parts of the discussion on the other. I therefore would, as your reporter of the section, make a full and clear answer to Dr. Beard's allegations.

First, as regards the accuracy of the report. Dr. Beard had provided the members beforehand with a printed abstract of his communication, prepared by himself, copies of which were distributed before he began to speak. (Some copies were also distributed on the previous day.) Dr. Beard began by saying that it was impossible, with so large a subject as heredity and in the brief time he had, "to do more than lay down for discussion a number of theses which he was prepared to defend." (This he repeats in his letter referred to above.[2]) He added that he had recently published in the *Review of Neurology and Psychiatry* a long paper on Heredity, with illustrations and diagrams which he would presently show by the lantern. Dr. Beard then entered on his exposition of the theses of his paper and as he proceeded the room was darkened for the use of the lantern. As far as I could follow there were about 14 such theses. Owing to the darkness of the room writing was impossible and I had from time to time to turn towards the glare of the lantern to make a note. I thus followed in outline Dr. Beard's theses as he developed them one by one and subsequently added to them such exposition as he had provided himself in the abstract written and distributed by himself. THE LANCET's report is thus a composite of what Dr. Beard spoke and of what he wrote, in the order of development, thesis after thesis which he adopted, and which in substance and in proper order appear accordingly in THE LANCET. To make a correct comparison possible I herewith inclose Dr. Beard's own abstract, marking out in it in blue pencil the 14 theses he dealt with in his speech. THE LANCET report, as you will observe (August 20th, p. 535-536), corresponds closely. Thus the report takes up in order the theses: (1) heredity and its germinal character; (2) doctrine of soma; (3) germ cells as Alpha and Omega; (4) recapitulation theory; (5) theory of "loose joining together" (amphimixis); (6) Weismann's theory of germinal selection and Darwin's theory of variability; (7) phenomena of fertilisation and of primary egg cells; (8) the Darwinian theory and Weismann's theory both as different from Nature's method; (9) Mendelism; (10) the positions occupied by Darwin's and Weismann's theory "completely and decisively outflanked and rendered untenable" by (11) Dr. Beard's own discoveries; (12) Weldon's doctrine of appeal to ancestry; (13) remarks on the modern biometrician; and (14) concluding remarks on environment. A careful reading and comparison of the two side by side will show that the report contains the exposition of Dr. Beard's theses in the order he pursued them, concisely and substantially stated and faithfully reproduced by the report as a composite of what Dr. Beard said and of what he wrote, thesis for thesis throughout. The only respect in which they differ is that whereas THE LANCET report follows the spoken theses in their order from No. 1 to 14, the order in which they appear in Dr. Beard's own abstract is slightly different—viz., numbers 1 to 8, then numbers 11, 9, 10, and then 12 to 14. There are in the report no "things attributed to Dr. Beard which he did not say."

As regards Dr. Beard's statement that he repudiated his having described Darwin's theory as a complete fallacy I noted that in his speech Dr. Beard used the words "complete fallacy" in regard to the Darwinian theory of variation and that when he replied after the discussion his repudiation was as follows: perhaps he had spoken too strongly about Darwin's theory, but his (Dr. Beard's) views

[1] THE LANCET, August 27th, pp. 640-641.
[2] Ibid., p. 641.

were not alone but were held, for example, by Bateson and some others (words to this effect). His statement in his letter diverts the issue, for I understood the criticism as a scientific statement *re* Darwin's theory, having nothing to do with Darwin's memory, which we all, of course, respect. Dr. Beard can surely perceive the difference. As for the disputed matters of the science and facts of heredity and quotations of authorities as between Dr. Beard and Dr. Andriezen I have recorded them as an indication that an active discussion did take place.

In concluding my report for THE LANCET the length of the whole amount of space available had to be considered and I, as reporter, could not go far beyond the limits of my instructions as regards space. The most essential and important parts of the speakers' views had been given and the replies (of Dr. Beard as well as of Dr. König) were only referred to in a line because they were answers to questions asked but introduced nothing new in the way of actual argument, except repetition or reiteration of theories or opinions of which the report had already taken notice.

I am, Sirs, yours faithfully,

YOUR REPORTER OF THE SECTION ON PSYCHOLOGICAL MEDICINE.

London, Sept. 6th, 1904.

To the Editors of THE LANCET.

SIRS,—I have just read Dr. Beard's letter in THE LANCET of August 27th (p. 640), in which he refers to his paper on Heredity read at the recent meeting of the British Medical Association at Oxford. The summary of the paper and of the discussion it called forth which appear in THE LANCET seem to me concise and essentially correct. But it cannot serve as a basis for discussion and I must demur to the precipitate remarks in Dr. Beard's letter. I have not as yet read Dr. Beard's paper in full, nor has he as yet published it in full so far as I am aware. When, however, the paper is published in full I shall give myself the pleasure of dealing with Dr. Beard's criticisms and his theories of heredity.

I am, Sirs, yours faithfully,

W. LLOYD ANDRIEZEN, M.D. Lond.

London, Sept. 2nd, 1904.

THE SECTION OF PSYCHOLOGY AT THE BRITISH MEDICAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—Having been travelling I have only just seen THE LANCET of August 27th and note therein that in your report of the discussions at the section of Psychological Medicine at the British Medical Association annual meeting I am stated to have referred to the rarity of dementia præcox "in the class of patients—*feeble-minded children under the London County Council*—with which he had to deal." I did not use the words italicised and have never had the honour to hold an appointment under the London County Council, though I was formerly a medical officer to the School Board for London and still serve under the Metropolitan Asylums Board. My reference was, however, to cases seen in consulting practice over school age. As I am anxious to disclaim pretensions to which I have no right I shall be obliged by your inserting this explanation.

I am, Sirs, yours faithfully,

Richmond Hill, Sept. 3rd, 1904. G. E. SHUTTLEWORTH.

THE BOILING OF MILK.

To the Editors of THE LANCET.

SIRS,—I am afraid that the questions raised by Mr. R. Bevan in THE LANCET of August 27th, p. 639, are even more complicated than his friend the bacteriologist indicated. His reasons for boiling milk before he listened to the iconoclastic scientist were, he states: (1) to prevent souring and decomposition; (2) to destroy pathogenic germs; (3) because it is said to make the milk more digestible; and (4) if the child has diarrhœa to help to constipate the child.

Now, first as to the effect of boiling on the digestibility of milk. Dr. Robert Hutchison[1] points out that though in a test-tube the clot formed by boiled milk is looser this is merely due to the precipitation of some of the lime salts which are immediately redissolved in the acid gastric juice. With regard to the rate at which boiled and raw milk leave the stomach the experimental evidence is not unanimous but Dr. Hutchison considers that on the whole boiled milk is probably slightly less digestible than raw. Dr. Emmett Holt[2] calls attention to the alterations in the phosphates and citrates caused by boiling milk as well as to other changes in the fats, lactose, and lactalbumin, which probably render it less fit for infant feeding. Dr. Clement Dukes in a letter to THE LANCET last year[3] did not hesitate to ascribe an increase in infantile scurvy and rickets to the now general practice of boiling milk. It is, however, uncertain to what extent children exclusively fed on boiled milk are in danger of contracting the former disease, which also occasionally occurs in breast-fed infants, and possibly Dr. Dukes has overstated the case.

That the ordinary pathogenic germs are destroyed by boiling is no doubt true. Behring,[4] however, thinks that this advantage is outweighed by the destruction of the immunising substances present in raw milk. He advocates a 1 in 4000 addition of formalin, but as to the advisability of this procedure a considerable division of opinion exists, as is shown by Dr. T. R. Bradshaw's letter which just precedes the one under consideration. Now as to "souring," there is certainly some evidence to prove that sour milk is rather more rapidly disposed of in the stomach than either raw or boiled milk,[5] but this only applies to healthy adults; in infants it is more than probable that the non-spore-bearing bacilli and cocci which are destroyed by boiling may cause digestive disturbances. There seems very little doubt, however, that it is to Flügge's "peptonising" bacteria (which are spore-bearing and cannot be eliminated by rapid boiling) that the milk diarrhœa of infants is mainly due.

It has been shown by Robertson and Mair[6] that the development of the spores can be materially checked if, after boiling, the milk is kept cool. Such milk they found "safe and reliable when kept even for two days below 70° F." It must be noted, however, that the experiments were made with sterilised sealed bottles. This fact should bring some solace to Mr. Bevan. Now as to the last of Mr. Bevan's reasons. Although boiled milk is constipating, given a child with diarrhœa due to the "peptonising" bacteria in its food, it is not reasonable to attempt to check the diarrhœa by which nature seeks to eliminate the toxic substances while at the same time we afford fresh pabulum to the hosts of offending bacteria already present in the intestine. The effects of boiling on milk intended for infants are thus complicated and far-reaching and many of the issues are at present doubtful. Most medical men who have studied the subject will, I think, agree that at present it is the simplest *prophylactic* measure we possess; but it must be combined with a proper cooling and protection of the milk after it has been heated. The question of preservative chemicals cannot at present be regarded as settled, but both these methods must ultimately be replaced by a system which will insure a clean milk-supply and which will educate the public as to the importance of detail in the handling of milk after it has been delivered to their houses.

I am, Sirs, yours faithfully,

J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon.

Clifton, Bristol, August 27th, 1904.

HOT WEATHER AND FOOD PRESERVATIVES.

To the Editors of THE LANCET.

SIRS,—The main point of Dr. T. R. Bradshaw's letter in THE LANCET of August 27th, p. 638, on this subject—namely, that the present high death-rate in Liverpool is a result of the successful campaign against food preservatives—is easily disproved. The increase in mortality is nearly entirely among infants whose main food is milk. Now milk has never been much preservatised in Liverpool and the campaign has been directed chiefly against the use of preservatives in other foodstuffs. Consequently their diminished use can have very little, if anything, to do in influencing the present epidemic of diarrhœa in comparison with former years. As regards the general question of their use in milk, it would seem that Dr. Bradshaw thinks his own wisdom and common sense superior

[1] Food and the Principles of Dietetics, second edition, p. 118.

[2] Diseases of Infancy and Childhood, second edition, p. 150.

[3] THE LANCET, Jan. 31st, 1903, p. 331.

[4] Ibid., Feb. 20th, 1904.

[5] Hutchison, loc. cit.

[6] Brit. Med. Jour., May 14th, 1904, p. 1123.

to that of the departmental committee which recommended: "That the use of *any preservative* or colouring matter *whatever* in milk offered for sale be constituted an offence under the Sale of Food and Drugs Act."

Although nobody may have thought it worth while to respond to a special invitation from Dr. Bradshaw, and he has not seen or heard of a case of injury from the use of food preservatives which satisfies him, yet there are on record several cases which seem sufficient to the unprejudiced observer. One of these was quoted by Dr. E. W. Hope in his evidence before the Food Preservatives Committee. It is, of course, a difficult matter to prove that any particular illness or symptom is due to preservatives and the diagnosis probably requires more than average clinical acumen. For this reason more satisfactory evidence is obtained from observations on healthy individuals and the researches of the Reichs-Gesundheitsamt in Berlin have clearly shown (in spite of Liebreich's contradictions) that boric acid in small quantities is by no means an indifferent substance.

It is by no means certain that preservatives in small quantities can prevent decomposition. They do stop putrefaction and thus destroy the signs by which decomposition is made evident to the senses. Their effect resembles that of tying down the safety valve of a steam engine. The advocates of food preservatives seem always to ignore, or to be ignorant of, the opportunity afforded and advantage taken of their use for dirty and fraudulent practices. Their use also renders vain all attempts to teach the hygienic value of care and cleanliness to the poorer classes when they find these virtues apparently superfluous.

I am, Sirs, yours faithfully,

Liverpool, August 29th, 1904. ALBERT S. GRÜNBAUM.

"PARALYSIS FROM LESION OF THE UPPER PART OF THE BRACHIAL PLEXUS."

To the Editors of THE LANCET.

SIRS,—I was much interested in Dr. R. T. Williamson's paper in THE LANCET of August 13th, p. 447, describing his two cases and his subsequent letter. The identity of the paralysis in the two cases is of great interest, though it is difficult to understand the escape of the pectoral and latissimus, when the deltoid, biceps, and supinator longus on the one hand, with the triceps and extensors in the forearm on the other, are paralysed. As I have shown elsewhere,[1] I believe the uncomplicated type of Erb's paralysis of the deltoid, spinati, biceps, brachialis anticus, supinators, and radial extensors of the wrist to be due to a lesion of the fifth cervical nerve alone, and not to a lesion of the combined fifth and sixth nerves, as stated in the text-books. Sometimes there is additional weakness and partial wasting of the pectoral, latissimus, and triceps, as in two cases I have now under observation, which would indicate the additional involvement of the sixth nerve, no doubt due to lesion of the combined fifth and sixth nerves or upper trunk of the plexus. In one of these cases, an infant with Erb-Duchenne birth paralysis, there is also paralysis of the extensors of the fingers in addition to the above-mentioned muscles, which, as Dr. Williamson suggests in his note, probably indicates involvement of the seventh nerve in addition to the fifth and sixth. Dr. Williamson's cases differ from mine in the escape of the pectoral and latissimus—muscles which I should expect to be considerably paralysed in a lesion of the fifth, sixth, and seventh cervical nerves, though it is true that both these muscles are partially supplied by the eighth cervical.

I am, Sirs, yours faithfully,

Queen Anne-street, W., Sept. 5th, 1904. WILFRED HARRIS.

THE TREATMENT OF THE HERNIÆ OF CHILDREN.

To the Editors of THE LANCET.

SIRS,—I have read with the greatest interest Mr. E. M. Corner's valuable paper on the Treatment of Herniæ in Children. The management by trusses is so troublesome, and as the condition is congenital and can be put right in a few minutes by a slight operation which removes either the funicular process or divides the prolongation of unclosed peritoneum by a couple of catgut ligatures, as recommended by Professor George Buchanan many years ago, I have strongly advised the above to be carried out. From a month onwards I have regularly done this and have never had any trouble and as there is no weakness of the pillars of the ring there is no recurrence. There is no doubt that a truss cures a certain number of cases but it is a very great trouble to the mother. Circumcision is very useful especially where there is adhesion of the foreskin to the glans and this should always be looked to, but the main cause of hernia in children is a patent funicular process. When operation is done early it is unnecessary to stitch the pillars as the hernia is congenital and not acquired as in most cases in the adult.

I am, Sirs, yours faithfully,

J. CRAWFORD RENTON, M.D.,
Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow.

Glasgow, August 24th, 1904.

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION.

To the Editors of THE LANCET.

SIRS,—In Mr. T. J. Bokenham's answer to my criticisms upon his paper he does not dispose of the main argument—namely, that the treatment he describes is not an improvement upon existing methods. I think we should always accept with great caution any new method of treatment which is based entirely upon empirical grounds. It has not, I believe, ever been proved that high-frequency currents have any direct healing effect upon the tissues, nor do we understand the physiological action of such currents. High-frequency currents seem now to be advocated for all sorts of diseases quite indiscriminately and without any scientific reason being put forward for their use. There is a certain class of patient who is delighted with any new form of treatment if it necessitates the use of complicated electrical apparatus. But we should, I think, be very cautious about accepting such forms of treatment for diseases the pathology of which is perfectly well known and the treatment of which by the ordinary methods is quite satisfactory and based upon scientific reasoning. And before we allow a purely empirical treatment which we do not understand to displace one based upon surgical experience and pathological reasoning we should require it to be proved that it possesses some very definite advantage over that in ordinary use. Mr. Bokenham has certainly not been able to show any such advantage in the treatment of hæmorrhoids and fissure by high-frequency currents.

I am, Sirs, yours faithfully,

P. LOCKHART MUMMERY.

Cavendish-place, W., Sept. 3rd, 1904.

CHARITY VOTING REFORM.

To the Editors of THE LANCET.

SIRS,—It will be of interest to those of your readers who are supporters of charity voting reform and to a number of the general public to whom the subject is unknown to learn that in the Clergy Orphan Corporation Schools the voting system has been abolished, a step taken with the approval of all the bishops, and since the abandonment the mothers of the children have been spared much trouble and expense in canvassing. In the Railway Benevolent Institution the system has been in abeyance for some years, whilst in the Royal Agricultural Benevolent Institution modifications appear to have been made. In the Royal Institution for the Instruction of Deaf and Dumb Children, though the laws of the institution provide for the election of inmates by the votes of the governors, that system of admission has not been resorted to for at least 15 years. In the National Orphan Home the subscribers place their votes in the hands of the committee which deals with the cases of applicants on their merits. Subscriptions are invited to help carry out the work of charity voting reform.

I am, Sirs, yours faithfully,

W. H. STURGES,
Secretary Charity Voting Reform Association.

36, West-street, Charing Cross-road, W.C., Sept. 3rd, 1904.

[1] Journal of Anatomy and Physiology, July, 1904, and Brit. Med. Jour., Oct. 24th, 1903.

INTESTINAL OBSTRUCTION AFTER GASTRO-ENTEROSTOMY.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 20th, p. 526, Mr. H. M. W. Gray records a case of intestinal obstruction after gastro-enterostomy. The obstruction was caused by the small intestine having insinuated itself through the ring formed by the under layer of the transverse colon above and the jejunal loop with its mesentery below. In his comment Mr. Gray remarks that he can find no record in the literature on gastro-enterostomy of such a condition. May I point out that a similar case is recorded by Dr. W. J. Mayo of Rochester, Minnesota, in the *Annals of Surgery* for August, 1902? The details of this case are reported in the second edition of "Diseases of the Stomach" (p. 257) by Mr. Mayo Robson and myself.—I am, Sirs, yours faithfully,

Leeds, August 30th, 1904. B. G. A. MOYNIHAN.

THE SERUM TREATMENT OF EXOPHTHALMIC GOITRE.

To the Editors of THE LANCET.

SIRS,—I have read with much interest Dr. G. R. Murray's note on this subject in THE LANCET of August 27th, p. 583, as for some months past I have been trying to produce a satisfactory thyreolytic serum. One objection to Dr. Murray's method occurs to me. These antibodies are usually quite specific. Thus a sheep injected with ox's blood develops an antibody for the blood of an ox and not for that of any other animal. Portis injected emulsions of dog's thyroids into goats and produced a serum which was cytolytic *for dogs*. Probably, therefore, it will be necessary to employ emulsions of human thyroids for injection into the selected animal to produce a satisfactory serum for Graves's disease.

I am, Sirs, yours faithfully,

W. LANGDON BROWN.

Finsbury-square, E.C., August 29th, 1904.

THE UTILITY OR OTHERWISE OF FEVER HOSPITALS: THE NEED FOR AN INQUIRY.

To the Editors of THE LANCET.

SIRS,—It is now becoming generally recognised that the results which are being achieved by fever hospitals—erected and maintained entirely out of public funds—are not nearly so great as we were wont to believe. It is not surprising, therefore, that a strong feeling is growing up that the subject calls for full investigation by some specially appointed tribunal.

In the leading article on this subject in your issue of August 27th you, Sirs, say: "The issues raised are complex, but we think that a case is made out for inquiry, and hope that that inquiry, if instituted, will be conducted without any introduction of personalities." The *British Medical Journal*, in an editorial on Feb. 27th, wrote as follows: "The facts and arguments advanced ..... are sufficiently cogent to afford justification for the suggestion that the advantages and disadvantages of hospitals in which cases of infectious disease are aggregated would be a suitable subject for investigation for a Select Committee, if not by a Royal Commission." Another weekly medical journal, the *Medical Press*, Dec. 30th, 1903, wrote: "Three questions suggest themselves. Are isolation hospitals effecting the purpose for which they were introduced? Are the drawbacks to the system inherent or capable of being removed? Are the enormous sums which these hospitals cost justified or could the money be better applied? These are grave matters and fully warrant the demand for combined inquiry by some representative body in the profession." The *Medical Magazine*, March, 1904, wrote in reference to fever hospitals: "It is a question of national gravity as to their continuance on the present system and in any case an official inquiry seems to be demanded. ..... In view of the enormous cost of these hospitals to the country we can only repeat our conviction that a searching inquiry appears to be necessary."

A resolution calling for an inquiry was passed in October, 1903, by the Southern Branch of the Society of Medical Officers of Health and more recently by the Congress of the Royal Institute of Public Health held at Folkestone last July. The demand for an inquiry being, therefore, clearly established it remains to be considered what form the inquiry should take. The subject is admittedly a highly complex one, and it is one of national importance for it concerns almost every sanitary district throughout the country. Moreover, the annual charge on the rates entailed by fever hospitals is, when compared with other items of preventive medicine expenditure, very heavy indeed. The plea which is now being put forward that these institutions are a great *convenience* to the public is not sufficient alone to justify this expenditure.

It is not unreasonable to claim that the subject is of sufficient importance to justify the appointment of a really authoritative tribunal, preferably a Royal Commission. The second point on which I wish strongly to insist is that the tribunal, whatever else its qualifications, must be an *impartial* one. This is all important. This question of the utility of fever hospitals has, as is well known, become a keenly controversial one. It is unfortunate that it should be so, but the fact remains. Those who have taken an active part in this controversy, on either side, are disqualified to sit in judgment, however well qualified they may otherwise be. So also those sanitarians who have been actively instrumental in securing the provision of fever hospitals in the past cannot be regarded as impartial or unprejudiced observers, though I am well aware that this will exclude many of our older and most able officers of health. There are, however, plenty of men available well qualified both as regards training and experience to investigate such a subject as this and without being handicapped by long-standing convictions or preconceptions. There is no necessity that the commission should be composed entirely of medical men; indeed, it would be better that it should contain some laymen. It should be the duty of this commission to receive witnesses and to collect evidence from every source and I venture to predict that when all available evidence has been obtained it will not be impossible for impartial judges to arrive at some definite conclusion.

I am, Sirs, yours faithfully,

Leicester, Sept. 7th, 1904. C. KILLICK MILLARD.

THE INDIAN MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 23rd, 1904, p. 254, "Lieutenant-Colonel, I.M.S.," writes with reference to an order which is called "the latest order of Lord Curzon's Government, dealing with the relations between officers of the Indian Medical Service and certain of their native patients." He further states with reference to this order that it "will make such medical officer liable to have his name removed from the Medical Register for conduct infamous in a professional respect" for the reasons given—viz., for betraying confidence to a third person—a civil political officer, &c. In THE LANCET of Sept. 3rd, p. 724, in dealing with the present position of the Indian Medical Service and comparing it with the Royal Army Medical Corps you say: "The blots on the present regulations for the Indian Medical Service are as follows," and under paragraph 3 you state: "The order of the present Government of India that an officer of the Indian Medical Service must refer the question of the amount of his fees when above a certain low limit to the civil authority. The recent orders might necessitate the violation of professional secrecy." The order mentioned is, as will be observed from the under-mentioned printed order No. 437, Home Department (Medical), dated Simla, July 26th, 1893, a modification of the same and in supersession of the notification of the order No. 813 of the Home Department, dated Dec. 8th, 1888:—

No. 437.

Home Department, Medical, Simla, July 26th, 1893.

In supersession of the notification of this Department No. 813, dated the 8th December, 1888, the Governor-General in Council is pleased to make the following rules regarding the remuneration of medical officers for attendance on native chiefs and nobles and native gentlemen of high position in a Native State.

2. When a native chief or noble or gentleman of high position desires the professional attendance of any medical officer of Government the latter will be at liberty to attend him, provided that such attendance does not interfere with the due performance of his ordinary duties. The special permission of the local government will, however, be necessary when such attendance involves the absence of the officer from those duties for any substantial time.

3. The native chief, noble, or gentleman may offer any medical officer

of Government attending him such fee as he thinks fit. The offer made will be reported by the medical officer through the political agent or other officer of Government exercising political functions in the state of which the said chief, noble, or gentleman is a resident for the consideration of the local government within whose jurisdiction the native state is situated. In reporting the offer the medical officer will state, so far as he is able to do so consistently with his position as a medical adviser, the nature and the extent of relief afforded, the importance of the case from a professional point of view, and the circumstances under which he attended the patient. The political agent or officer forwarding the report will submit it with such remarks as he considers necessary. The local government will have authority to sanction the acceptance of any fee so reported unless the amount appears to be out of proportion to the relief afforded and to the circumstances of the case, in which event the matter will be submitted with the local governments opinion for the consideration and orders of the Government of India.

4. The report prescribed in the preceding paragraph will not be required from a medical officer in the following cases: (1) when the officer names his own charges in accordance with a scale which he has fixed for his patients generally who are not native princes, or chiefs, and when such charge is accepted by the patients; and (2) when the officer and patient reside in the same station and the fee does not exceed Rs. 50 for each visit or Rs. 1000 in the aggregate for repeated visits during the course of a year.

5. For the purpose of this notification the term "Local Government" will be held to include an agent to the Governor-General and a resident of the first class.

No. 438—439.

Copy forwarded to the $\frac{\text{Foreign}}{\text{Military}}$ Department for information in continuation of the indorsement from this Department.

No. $\frac{814}{815}$ Dated the 18th December, 1888.

By Order
(Sd.) P. G. MELLITUS,
Deputy Secy. to the Government of India.

Circular No. 33 of 1893.

Dated Lucknow, the 18th December, 1893.

Copy forwarded to the Civil Surgeon at Bijnour for his information and guidance.

(Sd.) J. G. PILCHER, F.R.C.S., Surgeon-Colonel,
Offg. Inspector-General, Civil Hospitals, N.-W. P. and Oudh.

I am sure that the question of fees to medical officers in India from native chiefs, nobles, and gentlemen is one which it would be wise not to interfere with, for it is in many cases a religious institution among some of the families of the chiefs and nobles in that country, and it would be regarded as *infra dig.* for a rajah that his medical attendant should receive his fee doled out in so many rupees per visit as prescribed. While I was civil surgeon of the Prince of Wales's Hospital and superintendent of the Ishwair Hospital in Benares a rajah paid me in "gold mohur" fees (the gold mohur being the sum in professional and commercial transactions which is still current) and in tending me the gold coin he gave family reasons and asked me to accept the same as it was an old family custom not to fee in rupees. Would it not be wise to encourage such a custom, which gives pleasure to the donor, who feels proud to maintain what has been handed down by his forefathers, to one who has saved the life of a child or cured it of epilepsy and placed him in a position to inherit the throne instead of being consigned to a lunatic asylum? The educated natives of India are educated enough to perceive a want of "fellow-countrymanism" in the social atmosphere, hence the order has an element of danger about it, since it savours of a selfishness and doubts the integrity as well as the honesty of the donor and receiver of the fee.

Consider the offence such an order would give the whole of society, and particularly the English nobleman, if the Premier of England prescribed so many shillings per visit, and limited a fee to £200 in the year for the Duke of Westminster or Baron Rothschild to present as a mark of his gratitude to his medical attendant for saving his or his child's life, and also that the Home Secretary required a report of the case if the fee exceeded the prescribed amount, with the full particulars of the case from a "professional point of view"! A medical man is not to be feed according to his skill, experience, or his devotion to his duties, but purely to satisfy the curiosity of a Home Secretary in India from the views of a lay member and not the liberality and large-heartedness of his donor. Why conceal such enlightened selfishness under the cloud of an order to give it a different rainbow hue of purity, to receive any colour which it pleases the Home Secretary to paint his donor and the receiver in and consign to the sealed cover of Confidential Reports under lock and key? Lord Curzon would do India, his countrymen and women, as well as all His Majesty's subjects—white, brown, or black—in India and the British dominions throughout the world a lasting benefit if he removed the blot which now exists by inquiring fully into the merits of every case, for this would ever live in the hearts of people and cause the British nation and empire to be loved and admired by all right-thinking people. Such an order in its present construction neither appeals to British honour, large-heartedness, nor sense of justice, and I write this with no desire to make it private or confidential but with the object of raising the breeze of healthy public opinion about the question and in the interests of fair play and justice.

I am, Sirs, yours faithfully,

Sept. 6th, 1904. MAJOR, I.M.S. (retired).

THE SALE OF MEDICAL PRACTICES.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 27th, p. 629, you report the case of a medical man who had sold no less than 29 or 30 practices during the same space of years and you give some wise words of warning anent the buying of practices. Now it has been my unfortunate experience to meet another class of medical man who seems to have made his livelihood or at least added to his income by taking in (!) partners. His own son when writing to me on hearing of the dissolution described his "governor as a regular Bluebeard as regards partners," and so I have since heard from other medical men. I believe my late partner actually has had nearly 20 partners in about 30 years. Unfortunately men in the position I was never learn these facts until it is too late, and if only some association could be formed for would-be buyers to obtain advice from, or which could privately make inquiries and keep records for the protection of would-be buyers, it would doubtless fill a want. None at present exists, and I beg to suggest that you open your columns to receiving the experiences of men who have been "done" and thus give an opportunity for the drawing up a series of rules whereby the inexperienced buyer would avoid the pitfalls dug by such men as my late partner and the over-frequent vendor of practices to whom you alluded recently.—I am, Sirs, yours faithfully,

Sept. 4th, 1904. A LATE PARTNER OF BLUEBEARD.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Simla Improvement Scheme.—English Medical Men for Kabul.—The Uselessness of "Ocimum Viride" against Mosquitoes.—Items of Plague News.—The Re-marriage of Widows in India.

THE many who know Simla will be glad to hear of the active steps which are being taken for its extension and improvement. Fresh land has been acquired in the vicinity of Simla by exchange of land at Kotkai with the Rani of Koti. The installation for the electric lighting of this station is to be commenced shortly. The proposals for certain broad driving roads are being pushed along and the Sanjauli tunnel is to be widened. This latter scheme is estimated to cost Rs.50,000 and will be commenced at the end of the season. Very naturally the Government of India is taking a prominent part in all matters connected with the improvements and on the return of certain Government officials accelerated progress may be anticipated, more particularly during the next few months.

It was hardly to be expected after the skilled surgical assistance rendered to the Amir of Afghanistan for his recent accident that he would be content to rely on his own Afghan medical men in the future and it is now reported that he has intimated his desire for expert English medical men to be stationed at Kabul. The staff suggested is one medical officer, one lady doctor, and three hospital assistants with a small compounding staff. The Government of India has the matter under consideration.

The vaunted value of the plant "ocimum viride" for keeping off mosquitoes and as an effective destroyer of these insects has been put to the test at the Lucknow horticultural gardens. The plant is found in East Africa and some seed was imported last year. Numerous plants were raised and experiments conducted, but it is very clear that the plant is valueless for the purpose stated. It possesses a strong aromatic odour, especially when bruised. The plant belongs to the Casir or Tulsi family, several species of which, particularly ocimum sanctum, are well known in India.

So far plague has not been able to secure a footing in Burma notwithstanding that several imported cases have had to be dealt with from time to time. As the trade with Calcutta is extensive and the journey to Rangoon under four days this immunity points to the incubation period of this disease as being of three days or under, otherwise we should expect apparently healthy people to be landed but subsequently to develop the disease. The precautions taken against the spread of the disease have apparently been successful because persons taking the disease in Calcutta would be found ill on arrival in Burma and would consequently be dealt with. The success apparently obtained more than justifies the continuance of the existing regulations which while protecting the province cause comparatively little hardship to individuals. News comes from the Mysore district that for the first time in the history of plague elephants have become affected. It is said that one of the elephants belonging to the palace developed three buboes and succumbed to the disease. Other animals besides elephants are also reported to be dying in the forests but the cause is not clear, the only evidence avilable at present being that a number of villages on the banks of the river Kabini are infected with plague. It is just possible, however, that the disease amongst the animals may be anthrax.

Until recent years it was thought that the rigid caste system and customs of the great mass of the people of India were unchangeable. Every year, however, shows an awakening to western ideas. At the present moment the question of widow re-marriage and child widowhood may almost be said to have divided high-caste Hindus into two opposing camps. It is not perhaps generally known that girls are frequently married during their infancy and that by the premature death of their husbands they become condemned to life-long widowhood. These girls are popularly known as virgin-widows. The position given to widows in the Indian family is a comparatively degraded one. The passing of the Act sanctioning the re-marriage of widows has had its anniversary celebrated with great enthusiasm at Poona and it is evident that the practice of re-marriage of child widows at any rate is extending. There is also extending the permission to women who have become widows in adult ages to re-marry. Their lot is usually a hard one and it is asserted that many are thus thrown "upon the streets." The whole question is one not merely of meaningless custom but as affecting the race. If all the girl infants, widows, and other youthful unfortunates are kept in a perpetual widowhood the population suffers and as this custom is only rigidly kept by the higher castes the ultimate effects as well as the current evils are disastrous. The Act has restored civil rights to Hindus who married widows—it is wonderful how rights, especially pecuniary rights, influence the customs of India—and it is being largely taken advantage of. In the olden days it is not to be wondered at that female infanticide was common and the extensive prostitution of many of the towns must be fostered and forced by a custom which throws young women on the charity and mercy of their families. It is almost impossible to get at trustworthy figures but infant marriage is common and plague, cholera, and other pestilential diseases make many widows. The evil is therefore extensive and it is satisfactory to find that in various parts of India the movement with regard to the re-marriage of widows is spreading.

August 20th.

THE SANITARY INSTITUTE.—The thirty-eighth course of lectures and demonstrations for sanitary officers will be given from September to December, 1904. The lectures will be delivered in the Parkes Museum, Margaret-street, London, W., at 7 P.M., commencing on Monday, Sept. 12th, and Part I. of the course will consist of four lectures on elementary physics, chemistry, and meteorology, and 21 lectures on public health statutes and by-laws, on the practical duties of a sanitary inspector, and on municipal hygiene and building construction, and will include inspections of several public and private works illustrative of sanitary practice and administration. Part II. will comprise 7 lectures on meat and food inspection, including taking samples of water, food, and drugs for analysis. The fee for Part I. is £2 12*s.* 6*d.*; for Part II. £1 1*s.*; or for the complete course, £3 3*s.* Students and others desirous of attending the lectures are requested to send in their names at once to the secretary of the institute, Margaret-street, W.

THE NEW MUNICIPAL MEDICAL SERVICE OF AMSTERDAM.

(FROM OUR SPECIAL COMMISSIONER.)

Amsterdam, August 29th.

A YEAR ago the town of Amsterdam organised a new municipal medical service for the poor. This service is now in full working order and constitutes an important example of what can be done in regard to the problems involved. Formerly the medical assistance given to the poor was not so systematically planned out. The town had been divided into six districts and in each district there were general medical practitioners who received some payment from the municipality so that they should devote some of their time to gratuitous attendance on the poor. Now the commercial capital of Holland, which has more than half a million inhabitants, has been divided into nine medical or sanitary districts. Doctors of the Poor have been appointed for each of these districts. Though they are not absolutely debarred from attending private patients they are supposed to be too busy with their poor patients to be able to give any considerable time to private practice. In such circumstances the remuneration allowed by the municipality should be sufficient for it to be quite unnecessary for the Doctor of the Poor to attempt to obtain private and paying patients. This is hardly the case, for the practitioners in the employ of the municipality only receive about £200 a year. The municipality will, it is to be hoped, see the necessity of increasing this sum so as to secure the exclusive service of really competent men. In each of the nine districts there are a consulting room and surgery and offices which resemble the out-patient department of a large hospital. At least two medical men are engaged at each of these medical stations and in some cases the upper part of the house serves as a residence for the attending physicians. Some of these municipal medical officers are obstetricians and the others are general surgeons or physicians. A great improvement has been effected on the old consulting rooms and now ample provision is made for cases of minor surgery. Further, it should be noted that the poor are also attended in their own homes when incapable of calling at the consulting rooms.

Some idea of the importance of the change effected may be gathered from the fact that in 1901 the entry for the medical service made in the municipal budget amounted to 101,000 florins (there are 12 Dutch florins to the English £1). This same item is set down in the estimates for the year 1905 at 391,000 florins. But this sum includes the subsidies, amounting in the latter case to 166,000 florins, given to private hospitals. Of course, these figures do not comprise the cost of the two general hospitals of Amsterdam. These can accommodate from 1000 to 1200 indoor patients and are municipal institutions. But there are also a number of private hospitals—that is to say, hospitals supported by voluntary subscriptions and donations. Thus, there is a large Roman Catholic hospital which has some 600 beds, a large Jewish hospital, and some eight or ten small private hospitals containing from 20 to 100 beds. Some of these hospitals are judged worthy of assistance from the public funds; others contract with the municipality to receive a certain class of patients sent to them by the municipal medical service, and all this will, it is estimated, cost 166,000 florins during 1905. The hospitals at Amsterdam are reserved mainly for the indoor treatment of special or serious cases. Many of these cases are sent in by the municipal medical service which, in fact, replaces to a considerable extent the out-patient department such as may be seen in connexion with the hospitals in the larger towns of England. If there is hospital abuse for the in-patients such abuse is much more prevalent in regard to the out-patients. In England any number of persons who could well afford to pay medical fees present themselves at the various hospitals for gratuitous treatment. It is therefore particularly interesting to observe whether the Dutch system is more effective in preventing such abuse.

Since the reorganisation of the municipal medical service at Amsterdam the statistics published state that in 1903 25 medical practitioners were employed in the nine districts. Two of these, however, are not engaged in district work but attend exclusively to all persons employed by the

municipality and examine candidates for such employment. A third medical practitioner devotes his time exclusively to the insane. Then there are 16 female and ten male nurses employed and they not only assist at the consultations but go and nurse the sick in their own homes. Finally, 25 certified midwives are also attached to this municipal medical service. During the last year these midwives attended 2263 childbirths, calling in the district obstetrician whenever there was any need of his services. In the course of the last half of 1903 the first physicians gave 36,787 consultations at the surgeries and 12,028 at the homes of the patients, the second physicians 34,518 and 10,848 respectively, while the surgeons attended to 23,603 cases of minor surgery. At Amsterdam diseases of the hair, favus capitis, herpes tonsurans, and impetigo are very prevalent. These often require a great deal of patient nursing, such as the extraction, one by one, of the hairs in the affected part. Thus last year 495 persons suffering from such diseases of the hair were seen and attended to 17,396 times. Nor is this all. At one of the central consulting stations situated on the Kloveniersburg canal and under the able management of Dr. J. M. Huizinga a workshop has been established where orthopædic instruments, &c., are made for the use of the poor. The amount of work turned out last year by this municipal workshop is valued at 10,000 florins. The drug bill for the same year was 46,000 florins.

It will be seen from the above statistics that a great amount of medical assistance has been given and much work has been done. What precautions, however, were taken to prevent this falling into wrong hands? The rule is that to obtain this help and advice the patient must first apply to the Board of Poor Relief. There is no Poor-law in the British sense of the term, and such application does not involve disfranchisement or the same stigma of pauperism which accompanies the relief given under the British Poor-law. But to prevent abuse there is connected with the Amsterdam board for the relief of the poor a large and efficient staff of visitors. These persons visit every applicant in his own home; they also, if necessary, call on his employer and other persons likely to be acquainted with his circumstances. Then having ascertained all the facts of the case the assistance which has been proved to be needed can be given without reserve or hesitation. Thus the medical advisers do not merely give medicaments and advice, but last year 10,000 florins were spent for milk, eggs, and other articles of food which were judged to be necessary. Of course, it may be that some small portion of the food is eaten by others than the patient, but the nurses who frequently attend such cases strive to prevent this. There is also a gymnasium at the service of the patients and in three districts there are medical baths. It is not pretended that no abuse of any description exists, but when every patient is seen in his own home the abuse cannot be of a very flagrant character.

In one respect, however, no attempt is made to prevent abuse and that is in the treatment of venereal disease. With regard to this disease the authorities at Amsterdam seem to be imbued with the most modern conceptions. They have absolutely given up all idea of moralising over the subject. They deal with it as a great and terrible public danger, menacing especially future generations and the innocent. The one thing needed is to stamp out the disease where it exists and therefore the patient must be brought under treatment immediately. Consequently nothing is done to deter patients from seeking advice and, on the contrary, everything is so arranged as to induce them to do so. There is in the centre of the town a municipal medical service devoted exclusively to the treatment of venereal disease and attended by two practitioners who have made this disease the subject of special study. This municipal service has its premises at a hospital but does not form part of the hospital. It is open three times a week in the evening and no questions whatsoever are asked. The patients have simply to describe their symptoms. It is only when the patient is not able to buy the medicine prescribed that, like patients suffering from any other disease, he has to apply to the board for the relief of the poor. If, however, he can afford to buy the medicine he will get medical advice and treatment free and without any questions being put to him of a character likely to deter him from seeking such aid. Of course, these methods of procedure apply with equal and even with greater force to women. There is no Contagious Diseases Act in force at Amsterdam. Disorderly houses are illegal but a good many exist notwithstanding. Nobody seems to know whether venereal disease is more or less prevalent than in the past, but in any case a strong conviction has gained ground that it should be treated like any other contagious disease and that every effort should be made to prevent the neglect and concealment of cases. Perhaps, in conclusion, the one salient fact that comes out of this new organisation is that, while the deserving poor seem able to obtain, and this without humiliation, the medical aid which they need, the medical practitioners on their side are paid for doing the work which, and to a large extent, would in England be performed gratuitously in the out-patient departments of the large hospitals.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hospital Matters.

Mr. Augustus Clay, who has for many years occupied the position of honorary surgeon to the Royal Orthopædic Hospital in this city, has recently resigned that post. In accepting his resignation the committee of the hospital passed the following motion:—

That the resignation of Mr. Augustus Clay be accepted with regret and this committee desire to place on record their appreciation of the great services rendered by Mr. Clay to the hospital during the many years he has been acting as honorary surgeon.

Mr. Clay has been elected honorary consulting surgeon to the hospital.—The vacancy on the assistant staff of the General Hospital, caused by the promotion of Dr. T. Sydney Short to the position of honorary physician, has been filled by the election to the post of assistant physician of Dr. S. Herbert Perry who has been for some years casualty assistant physician. The casualty assistant physicianship thus vacated has fallen to Dr. W. H. Wynn, a graduate of Birmingham and London Universities, a distinguished student of the Birmingham school and the author of some noteworthy papers, who has for some time filled the post of pathologist to the hospital.

Child Insurance.

In face of the fact that a crusade against child insurance seems to be contemplated by certain persons a representative of the *Birmingham Gazette and Express* obtained an interview with the coroner for the city, Mr. Isaac Bradley, who is not merely a very experienced official but also a man who takes a very deep and instructed interest in all problems of sociology. Mr. Bradley told the representative of the above-named paper that child insurance was "an act of prudence which personally I should be sorry to discourage." He pointed out that it is practically impossible for parents to make any profit by the death of their children since the amounts received on infantine assurance are strictly limited. Herein lies the safeguard. The scale of the insurance companies is such that there would be very little advantage in planning the death of a child from birth. The law had safeguarded the point of people duplicating insurances and trying to pick up sums from several offices, and the law, he thought, was sufficient in this matter of child insurance. Mr. Bradley pointed out that he did not see how unscrupulous people, determined on abusing child insurance, could so abuse it as to make it pay them. Cases of suffocation occurred mostly within the first year of life. At a premium of one penny per week, if the child died within the first three months, the amount paid was 30*s.*; within six months, £2 10*s.*; within one year, £3; two years, £3 10*s.*; and so on in proportion up to the age of ten years, when the amount paid was £10. The coroner further added that deaths from overlying were plainly of an innocent character and that practically no cases had come before him in which the parents could have made money out of the death of the child. Finally, he said that he had never had a case before him in which it could be said that insurance had been effected for the purpose of gain by death.

Health of Wolverhampton.

Dr. Henry Malet, medical officer of health of Wolverhampton, has recently issued his report on the health of that town for the year 1903. The deaths numbered 1465, as against 1575 in 1902, making a death-rate for the year of 15·2 per 1000. In 1900 the death-rate was 21·4, this figure being about that of the previous ten years. In the last

decade the birth-rate was 33·46 and in the decade before that it was 34·14. In 1903 it was 29·43, a still further diminution being thus shown, for the average for the previous two years was 31·8. The fall in the birth-rate to some extent explained the decrease in the gross number of infant deaths, which item had formed a comparatively small portion of the mortality bill for the past two years. In connexion with the sanitary condition of the borough Dr. Malet refers to some defects and particularly directs attention to the necessity for conversion of the pail system into a water-closet system which should be done under the Provisional Order but which would be a heavy charge on the rates, as in most cases much of the cost would have to be borne by the borough. There was, however, no one thing that could be suggested in connexion with the improvement of the public health which was of such importance as this change. There was another great need which, though it was perhaps second in importance to that already indicated, would in all probability have to come first in order of time. This was an increased water-supply and that problem must be faced at the earliest possible opportunity. Not only would any great conversion of pail-closets into water-closets put too great a demand upon their present water-supply but such conversion in the poorer districts would scarcely be possible unless the necessary water could be supplied gratuitously. Not only so, but experience of the past three years, and especially of the last, showed unmistakeably what a lavish supply of water for general cleansing and flushing purposes could do for the health of the town. The benefit of a free use of water was twofold: first, the general cleansing effect—yard and court surfaces, roads, and drains were all washed and thus decomposing matters were removed and air impurity lessened; and, second, the prevention of dust. This was a matter of the greatest importance; dust, and especially the lighter dust, was mostly organic matter and contained myriads of living germs, many of them germs of disease. The amount of filth that was inhaled and swallowed in that form in dry weather was simply inconceivable and anything that would diminish the evil made strongly for the public health. The milk-supply was a matter which concerned the health of all large towns and especially, of course, the health of children. Unfortunately at present any efficient control was impossible, for they had no jurisdiction outside their own boundaries, and most of the milk-supply came from outside, some of it from very far outside.

Health of Warwickshire: Decrease in the Birth-rate.

In his report on the health of the county of Warwick for the year 1903 Professor A. Bostock Hill, the county medical officer of health, calls particular attention to the diminution in the birth-rate. "The human element," he says, "is the main factor of power and no increase of wealth can compensate a nation for the loss of virile citizens, on whom the ultimate safety of the country must depend." He views with serious apprehension the constant decline in the birth-rate throughout the country and calls public attention to the fact that if the production of healthy children is to be checked, as it has been of late years, we must expect a progressive moral and physical deterioration. As compared with 1902 the number of births during the year had decreased by 79, which brought the birth-rate below the average for England and Wales. Two rural districts showed a higher rate than is recorded in any of the urban districts. The lowest birth-rate was in Coventry but nowhere perhaps had the decrease in the birth-rate been more marked than in the borough of Aston, where it had fallen from 44 per 1000 in 1874 to 28·7 per 1000 in 1903. Mr. F. H. May, the medical officer of health of the borough of Aston, attributes this highly unsatisfactory state of affairs to the "lessened number of marriages and the effect of education in fostering an inclination in many to restrict their families, a desire attributable in some to mere selfishness and in others to the fear that in the keen competition of life they will not be able to maintain and bring up a large family to the standard they would wish."

Home for Epileptics—Aston Board of Guardians.

This board has recently considered the report of its representatives at the conference between the three Birmingham boards on the subject of the care of sane epileptics and feeble-minded persons. The figures, so said the chairman, Mr. W. Brown, as furnished were not a very trustworthy guide as to the cost of such an operation as was under discussion. From estimates, however, which had been got out by the clerk it worked out that Aston would have to spend on the care of these classes of inmates something like £600 or £700 per annum more than they were now doing. The conference was of opinion that it was desirable for the three boards to combine for the purpose of providing and maintaining a home for the reception of the classes of cases mentioned above and that, in the first instance the accommodation provided should be for 200 inmates: 110 by the Birmingham Board, 40 by the King's Norton Board, and 50 by the Aston Board. A motion that the Aston Board should join with the others named above was eventually put to the meeting and unanimously carried.

Sept. 8th, 1904.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Health of Liverpool: Decrease of the Death-rate.

AT the weekly meeting of the health committee of the city council held on Sept. 1st it was reported that the death-rate was 29·4 per 1000, as against 37·7 per 1000 a fortnight ago and 20·8 per 1000 for the corresponding period of last year. There had been 177 deaths of children under twelve months old. Deaths from diarrhœa numbered 180, as against 259 in the previous week. There were 276 cases of scarlet fever in the city hospitals. The health committee has authorised the medical officer of health to have circulars printed for distribution by the Charity Organisation Society in reference to the care of children.

Public Health Congress: Report of the Liverpool Delegates.

The report of the delegates from the Liverpool city council who attended the annual congress of the Royal Institute of Public Health at Folkestone in July has just been issued. Mr. A. Shelmerdine read a paper on the Distribution and Sale of Humanised and Sterilised Milk. He gave an account of the municipal milk depôt in Liverpool and its administration and the details of preparing and distributing the milk. As regarded the results, he said that, without attempting to draw too close deductions, the fact stood out that of the 4453 infants coming very promiscuously to the depôts at varied ages and in conditions of health below the average the mortality was 78 per 1000, as against 159 per 1000 for the whole city. But it must be remembered that in that 159 per 1000 for the whole city, and 88 to 118 for the best districts, and 212 to 215 for the worst districts, were included also breast-fed infants. Clearly, if breast-fed infants were excluded and artificially-fed infants only taken into account the rate of mortality amongst them would be enormously higher and would show even more forcibly the advantages of the sterilised food, which of course is an artificial food, over other methods of artificial feeding. On the point of the general milk-supply the sense of the section was in favour of compulsory inspection organised by a superior authority which could not be influenced by local interests. Infantile mortality was a subject which received close attention. The delegates declared that broad facts stood out that artificially fed infants in times of drought and heat suffered enormously, whilst breast-fed infants, although by no means escaping altogether, yet did escape to a very great extent. It was manifest from the discussion that local conditions varied very considerably, that the incidence of mortality varied, and that the period at which an outbreak reached its maximum in one town differed widely from that in another town. The housing problem, the need for isolation hospitals, and hospitals for consumptives also engaged the consideration of the meeting, and in regard to the latter subject the deputation pointed to the remarkable decline in the amount of tuberculous disease in Liverpool in comparatively recent years as evidence of the influence exerted by general sanitation on this form of illness.

The Liverpool School of Tropical Medicine and Tropical Disease Research in West Africa: Honour for Major Ronald Ross, C.B.

The chairman of the Liverpool School of Tropical Medicine (Sir Alfred Jones, K.C.M.G.) is sending Dr. Christy, who has just returned from the Congo sleeping sickness expedition of the school, to Anno Bon in order to continue further to

extend observations upon trypanosomiasis. Anno Bon is a small and very little known island and affords a very excellent opportunity for conducting scientific investigations not only in problems of disease but also in anthropology and natural history. Major Ronald Ross, C.B., F.R.S., late I.M.S., the professor of tropical medicine at the University of Liverpool and director of the Liverpool School of Tropical Medicine, has been elected foreign corresponding member of the Paris Academy of Medicine.

Dr. A. S. Grünbaum's Appointment at Leeds University.

Dr. Albert S. Grünbaum, lecturer on experimental medicine at the University of Liverpool and director of the Liverpool Cancer Research, is to be congratulated upon his recent appointment as professor of pathology at the University of Leeds. A graduate in arts and medicine of the University of Cambridge, he has been trained in London, Bonn, Vienna, and Berlin; he has therefore had the advantages of a wide education. For several years past he has devoted himself to scientific research, more especially in connexion with experimental medicine. It has been in this pursuit that he has gained for himself universal distinction in connexion with the application of the serum reaction to the diagnosis of typhoid fever. He has worked hard at the Thompson-Yates laboratories at the University of Liverpool and for several years he acted as treasurer of the laboratories and has initiated a most efficient and economical system of laboratory finance. The chemical study of the actions of pathogenic organisms has especially occupied him. Some of the work coming from the Liverpool laboratory to which his name has not been formally attached nevertheless owes its initiation and fulfilment to him. Dr. Grünbaum has the advantage of being a good linguist and widely read in the literature of his subject. He was Goulstonian lecturer for 1903 at the Royal College of Physicians of London and amongst other distinctions he held the Grocers' Company Research scholarship and the Ernest Hart Scholarship of the British Medical Association. He takes up his appointment at Leeds with the best wishes of his numerous Liverpool friends.

Waterloo District Council and Sterilised Humanised Milk: Infantile Mortality.

The chairman of the health committee of the district council reported that he had had an interview with Dr. E. W. Hope (the medical officer of health of Liverpool) with reference to a supply of sterilised humanised milk for distribution in the district. The health committee thereupon instructed the inspector of nuisances to arrange for a supply of the milk for the district forthwith and to notify the medical practitioners of the district accordingly. The large infantile mortality in the district has been mostly due to diarrhœa, as in Liverpool.

Sept. 6th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

New Isolation Hospital for Pontypridd.

AN isolation hospital which has been erected by the Pontypridd urban district council was formally opened on August 25th by Sir Alfred Thomas, M.P. The site, which consists of two acres, cost £500 and is situated in an elevated position about four miles from the town. The buildings include an administrative block, two one-storey pavilions each with two wards, and one block for a mortuary, laundry, and disinfector. There is a total accommodation for 20 patients. The cost of the institution is about £9000. The need for a steam disinfector is emphasised in the last report of the medical officer of health (Mr. Howard Davies) when he states that during an epidemic of small-pox in 1903 compensation for infected clothing destroyed was paid to the amount of £111, most of which sum would have been saved had a steam disinfector been in use. In 1902 there were 383 cases of scarlet fever, with 13 deaths, in Pontypridd and in 1903 there were 358 cases with nine deaths. The town has a population of 33,000 persons.

Cardiff Infirmary.

In the printed report of the Cardiff Infirmary which has just been issued there is contained for the first time in tabular form an account of the cases admitted for treatment into the wards of the infirmary and of the operations performed. The tables refer only to the latter half of the year 1903 but if the compilation is continued in future reports, as it doubtless will be, a valuable record will result. During the period named there were admitted into the infirmary 978 patients, of whom 127 were treated in the gynæcological ward and 183 in the eye ward. Of the 528 operations undertaken 86 are placed under the heading "gynæcological" and 138 were operations upon the eye.

Importation of Frozen Meat to Cardiff.

An increasing quantity of frozen meat is reaching Cardiff. During the second quarter of this year six cargoes were delivered, all from the River Plate, and included the equivalent of over 40,000 carcasses of mutton and nearly 4000 of beef. These imports are all inspected on arrival and the inspector of nuisances of the sanitary authority within whose area they are consigned is notified so that the meat is kept as far as possible under supervision until the time of sale.

Death of Dr. Edward Crossman.

The announcement of the sudden death of Dr. Edward Crossman on Sept. 1st was received by the medical profession in Bristol with feelings of sincere regret. He was born in the year 1832 and was a student at the London Hospital in the "fifties," acting as house surgeon after qualifying as M.R.C.S. Eng. and L.S.A. in 1855. Later he obtained the licence of the Royal College of Physicians of London and graduated as M.D. Durh. More than 20 years ago he was appointed medical officer of health to the Barton Regis rural sanitary authority and at the time of his death held the same position under the rural district council. He took a keen interest in his sanitary work and many important sanitary improvements in the district were due to his initiative. Dr. Crossman was on the staff of the Frenchay General Dispensary and of the Hambrook Village Hospital. He was a past president of the Bath and Bristol branch of the British Medical Association.

Trials of Small Motor-cars.

The trials of small motor-cars which took place in Herefordshire last week cannot fail to be of interest to medical practitioners. There were 35 cars submitted to trial divided into four classes with a maximum price of £125, £150, £175, and £200 respectively. Two journeys of 50 miles each were made daily by every car so that in the six days 600 miles were completed. The result of the trials has shown that there are on the market trustworthy cars at a low price. Four cars made all the 12 runs without stopping and in very many instances where a stop had to be made it was for a trivial and easily remediable cause. One of the cars in the £125 class did very well and at the end of the week was in excellent condition. In the third and fourth classes as many as 15 cars have been recommended by the judges for non-stop awards. The main roads in Herefordshire are of an average condition and there are a few stiff hills, all of which with one exception were easily taken by all the cars. In spite of the large number of motor cars of all sizes which were in the city of Hereford and the surrounding district during the week it is gratifying to learn that only two slight accidents occurred.

Death of Dr. George Strong.

Dr. George Strong, who died at Bath on August 29th, was in his 93rd year. He was the son of the late Rev. Robert Strong of Brampton Abbotts, Herefordshire, and was a descendant of Sir Francis Drake. He took the degree of M.D. at the University of Edinburgh in 1835 and in the same year was admitted L.R.C.S. Edin. For many years he resided in his native county near Ross. He had a very high reputation as an antiquarian and was the author of a work on "The Heraldry of Herefordshire." He was a deputy-lieutenant and the oldest justice of the peace in the county, having been placed on the commission in the year 1844. His wife died in 1892 and he is survived by two daughters.

Sewage of Axminster.

At a meeting of the Axminster (Devon) rural district council held on August 25th a communication was read from the Devon county council inclosing an order under the Rivers Pollution Act to prevent the sewage of Axminster from flowing into the river Axe and stating that if no steps were taken in the matter within two months legal action would ensue.

Sept. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Sanitary Clearances in Dublin.

A SCHEME for the erection of new buildings in the wretched district of Montgomery-street is one of a series of similar works recently undertaken by the corporation for the clearance of a number of contaminated areas which have long been centres of disease in Dublin. The clearance of this area will cost £70,000, of which £11,000 is put down to the cost of acquisition. Of the latter cost £6700 is charged against the public health fund. It is intended to provide for the erection of dwellings on the area of about two acres which is being acquired, with suitable rooms and sanitary accommodation for about 2500 persons. The buildings will be subdivided into 484 single-room dwellings at rents from 2*s.* to 3*s.* per week and 64 dwellings the rent of which will vary from 3*s.* to 4*s.* 6*d.* Each set of rooms will be a complete dwelling in itself, containing its own water-supply and sanitary requisites. This comparatively inexpensive project seems a move in the right direction and may perhaps improve the health of Dublin to a greater extent than the main drainage scheme which is gradually being accomplished at a cost already of about £300,000. The much maligned river Liffey—in which, as has been said, a man cannot be drowned because he is first poisoned—has never been such a cause of ill-health as the filthy and hopelessly unsanitary tenement houses in certain parts of the city. This was the opinion of the widely experienced sanitary commissioner of THE LANCET who visited Dublin some years ago. The Liffey is malodorous at low tide but there are worse rivers. I know a far more ill-smelling and sewage contaminated stream which traverses—without much apparent injury to health—a far larger and more wealthy city.

Revaccination in Ireland.

No new cases of small-pox have appeared in Dublin but the following circular letter has been addressed to the morning papers:—

SIR,—As small-pox is appearing in so many parts of Ireland I would most earnestly impress upon those persons who have only been vaccinated in infancy the desirability of getting themselves at once revaccinated.

The last epidemic of small-pox in Dublin clearly demonstrated the all but absolutely complete immunity of recently revaccinated persons.

Yours, &c.,
CHARLES A. CAMERON.
Medical Superintendent Officer of Health.

Public Health Committee, Municipal buildings,
August 26th, 1904.

The Sanatorium Question.

At a meeting on August 23rd the Belfast board of guardians by 24 votes to nine decided to adopt a report recommending the Local Government Board to take such immediate steps as will enable the guardians to make provision for the treatment of the consumptive poor committed to their charge. They are in favour of the site known as "The Abbey," near Belfast, and as soon as this question is settled they will proceed to formulate a scheme for the reception of the class of inmates proposed to be accommodated in the auxiliary workhouse. It seems absurd for the guardians to wish to have a sanatorium for consumptives and the public health committee another when a conjoint one would do quite well.

The Belfast Lunatic Asylum.

Dr. W. Graham, medical superintendent of the Belfast Lunatic Asylum, has just published his report—the seventy-fourth—for the year ending Dec. 31st, 1903. There were during the year 254 admissions and the total numbers under treatment were—males, 605; and females, 653; making a total of 1258. There were 116 discharges and 83 deaths. There were 13 fewer admissions than the previous year. Taking all admissions for the year 122 were males and 132 were females, the preponderance of females being due to the fact that they outnumber the males in Belfast in the proportion of 187,564 as compared with 161,616. The gross expenditure for the year was £25,661 0*s.* 10*d.*, being a net capitation cost of £23 9*s.* 10*d.*, or £2172 0*s.* 10*d.* less than in the preceding year. Deducting the Government grant, increase from the farm produce, pay patients, and miscellaneous sources the amount chargeable to the city rates of Belfast is £13 14*s.* 5*d.* per patient. It is noteworthy that while in other places there has been a real as well as an apparent increase of insanity in the city of Belfast in 1903 there has been a perceptible decrease. Dr. Graham discusses in his report the question of heredity, pointing out that we inherit not insanity but an ill-adjusted nervous system which may easily collapse beneath an unaccustomed strain; and with reference to intemperance as a cause of insanity he thinks that alcoholism is more often the symptom of an already existing degeneration of the brain and nervous system. He thinks the change of diet among the working-classes (tea and white bread instead of porridge and potatoes and fish) very bad and a causal factor of insanity, and he deplores the increase of general paralysis of the insane—a malady largely preventable. He urges that in every school in the land there should be a teacher of physiology in its ethical, social, and practical aspects—nay, more, in the greater school of the world, physician and preacher, journalist and moralist, should never tire of expounding the doctrine of heredity, the evils of intemperance and immorality, the education of children born with defects of blood, and the infinite danger of marriage with neurotic persons. When, Dr. Graham says, the leaders of public opinion are aroused to some such propaganda we may expect an abatement in the incidence of this most incurable and terrible of disorders, but not until then. The whole report is a most interesting one.

Dispensary Medical Officers' Holidays.

A curious situation has arisen in the Limavady union (co. Derry). Six weeks ago Mr. D. Thompson, medical officer of Feeny Dispensary, applied to the Limavady guardians for a month's leave of absence and at the same meeting a memorial was received signed by a number of the dispensary patients asking the board not to appoint Dr. A. G. Martin of Dungiven as locum-tenent. The guardians, however, appointed Dr. Martin but the Local Government Board refused to sanction the appointment and asked them to appoint some other medical gentleman as locum-tenent and to let Mr. Thompson go for his holidays. The guardians refused and as a result the Local Government Board has resolved to hold an inquiry into the matter. The affair has aroused great interest in Limavady union and at a meeting of the guardians held on August 29th a motion was unanimously passed rescinding a former resolution by which Mr. Thompson had been granted a month's leave of absence.

Small-pox in Ulster.

The Local Government Board has recommended the adoption of the Infectious Diseases Notification Act in Clones owing to the outbreak of small-pox. No fresh cases are reported in county Fermanagh and in Newry it has been decided as a precautionary measure to purchase a tent with accommodation for eight patients and a small tent for two nurses, the whole to cost a little over £70, as a preparation for any outbreak of small-pox.

Typhoid Fever in Portadown.

In Portadown the authorities are obliged to send clothes in cases of infectious disease to be disinfected at Lurgan. On Sept. 3rd this was done in the case of a family of five and it was reported at a meeting of the Portadown town council on Sept. 5th that these people had been kept with nothing to cover them, the clothes not being returned. The sanitary committee was directed to inquire into the matter and to arrange that in future poor people should not be without clothing. Why has Portadown, with a population of 11,000, not a disinfecting apparatus?

Sept. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Oath of Professional Secrecy.

ON July 18th the Court of Appeal (*Chambres des Requêtes de la Cour de Cassation*) decided that the certificate of a medical man who affirmed that up to the time when he ceased to attend upon a certain person such person was in sound mind and in full possession of his mental faculties did not constitute a breach of the oath of professional secrecy, which breach is forbidden by the penal code, and that judges who considered such certificate to be worthy of confidence could admit it as evidence.

Regulations as to the Accommodation of the Staff in Industrial and Commercial Establishments.

The *Journal Officiel* has just published the presidential decree with regard to the regulations of the *Administration Publique* for the application of the law dealing with the hygiene and security of workers so far as concerns their sleeping accommodation in industrial and commercial establishments. The principal clauses are as follows. The cubic air space in the sleeping room of the staff must not be less than 14 cubic metres for every person. The dormitories must be well ventilated and supplied with windows opening directly on to the outside air. Such rooms as are not ventilated by a chimney must be provided with some other mode of ventilation which will act continuously. The dormitories must be at least 2 metres 60 centimetres high, but anything over 2 metres 40 centimetres will be considered sufficient so long as it only is concerned with dormitories which have been built before the passing of the present law. If the ceiling is one with the roof of the house it must be impermeable. If the masonry of the external walls is less than 30 centimetres thick they must have an air space or some non-conducting layer of sufficient thickness to protect the occupants of the rooms against sudden changes of temperature. Rooms used as sleeping rooms must only be occupied by persons of the same sex and every person must have for his own exclusive use bed furniture comprising the following: a bedstead, a chain mattress or a straw paillasse, a mattress, a bolster, a pair of sheets, a quilt, and a cupboard in which he may place his things. There must be at least 80 centimetres of space between the beds, and except the superintendents who may be deemed necessary for keeping a look-out during the night no one of the staff may sleep in the workroom. The floor of the sleeping rooms must be of some substance which can be easily washed and the walls also are to be covered with some substance which can be washed or else covered with whitewash. This whitewashing must be renewed whenever cleanliness renders it necessary, and at the very least every three years. All the bedding must be kept properly clean and the sheets are to be washed at least every month and, besides this, every time that the occupant of any bed changes. The hair mattress must be carded at least every two years and the paillasse must be renewed at least twice a year. Sleeping rooms must never be allowed to be full of dirty linen. They must be washed down every day either with scrubbing brushes or with damp cloth. In case of necessity every care must be taken for the destruction of vermin, and the staff shall be given a good supply of drinking-water and washing basins, at the very least one for every six persons, and these washing basins must be supplied with towels for each person and with soap. No sleeping room is allowed to be crossed by any flue unless such is constructed in smoke-tight brickwork. Sleeping rooms must not have any direct communication with water-closets, sewers, waste-pipes, or cesspools. One year's grace is allowed before the decree is to be strictly applied.

Proposed Remedies for the Overcrowding of the Medical Profession.

It is well known that the medical profession in most countries is much overcrowded and in France more particularly the number of medical men increases day by day in a ratio which is very disquieting as regards the future success of individual members of it. This overcrowding has inspired certain medical men to look for some practical means of preventing it. One of them, by name Dr. Dumas, has published an article supported by a great many proofs in the *Echo Médicale de la Seine* dealing with the question. As a matter of fact the French faculties and schools of medicine, so far from limiting their already very exaggerated output of medical men, deliberately try to increase it. The competition among these institutions takes the form rather of seeing which of them can get hold of the greatest possible number of students rather than of elevating their studies. Dr. Dumas proposes that first of all there should be a very severe entrance examination held before any student could be admitted to a faculty or a school. This would eliminate those who were quite incapable or those who are merely "cranks" (*fantaisistes*). He also recommends that in the faculties the teaching body should be separated from the examining body and the creation of a body of examiners who should periodically examine in the different faculties and schools. Of these two propositions the first is by far the most practical and as a matter of fact the preliminary examination which already exists—viz., that in physics, chemistry, and natural history—has given very good results. The second proposal has also its good points but it would be necessary that the special examiners should guard themselves very carefully from falling into the error of always asking particularly difficult questions. The questions set by them should be, above all, practical. No doubt good results could be obtained by the application of these two methods, but the best thing would be to do away with the dispensations granted for military service. Unfortunately, the evil is due to general causes which are very difficult to estimate. If the profession of medicine is becoming all-important—thanks to the place which hygiene takes in modern society—nevertheless, the medical man more and more is tending to become a mere machine—that is to say, to occupy a servile position. It is quite time that medical men should organise themselves professionally so that they may have the power to offer to the State the services which it has a right to demand without being in the position of slaves.

The Drinking-water Question in Paris.

A commission has just been set on foot by the general council of the Seine to study the different proceedings which are employed in Germany for the purification of drinking-water. The commission set out from Paris on August 20th. It is composed of five general councillors and the terms of reference are to study the methods for bringing water from the source of supply, the method of filtration, purification, and sterilisation of drinking-water, and generally the different kind of hygienic methods employed in Germany. The commission will visit in succession Berlin, Magdeburg, Hamburg, Frankfort, and Elberfeld. A meeting was held at the Hôtel de Ville where the details of the mission were decided upon. The director of the water service of Paris and the director of the hygienic department of the prefecture of the Seine will accompany the mission.

Fire at an Asylum.

On August 29th a terrible fire destroyed one of the out-buildings connected with the asylum at Bicêtre, which belongs to the Assistance Publique and which gives a home to over 5000 old people. The building, which was entirely separate from the asylum itself, was given over to various kinds of heating apparatus. It was a three-storeyed building consisting of a basement where were the stoves, a ground floor that served as a drying room, and a top floor. It was two o'clock in the morning when flames were seen bursting out of the basement. The linen which was stored in the drying-room and all the portion of the building which was constructed of wood afforded plenty of fuel for the fire and the destruction was enormous. There were no accidents to life or limb.

Newspaper Boxes for the Sick in Hospitals.

More than 20 years ago M. Bourneville issued a report upon this matter in the budget of the Assistance Publique for 1879. He suggested that the administration of the Assistance should take note of a practice which existed in England—viz., that the railway companies allowed the nearest hospital to their station to place boxes on the platforms and in the waiting-rooms in which travellers could put papers and magazines for the use of the sick. No notice of this proposition was taken for a good many years, but at last the necessary steps were taken and the railway companies first of all gave leave to place such boxes in their Paris stations and later at the various large provincial stations. Quite recently many of the medical journals have just reopened this question and have been inviting their readers to place any stray magazine or paper which they have finished in these boxes for the sick.

The Congress of the French Association for the Advancement of Science.

I have already from time to time given your readers *précis* of various communications made to this Congress and I am now able to lay before them a general account of the Congress. It was held at Grenoble from August 4th to 11th and the theme of the opening address was the Social Rôle of Science. The President of the Section of Medical Science was Dr. Serriol; of Medical Electricity, Dr. Béclère; and of Hygiene and Public Health, M. Loir. The following were some of the principal papers: Dr. Poncet, Psychoses of Thyroid Origin; Dr. Manquat, Pre-tuberculous Bacillary Infection; Dr. Nicolas and Dr. Dumoulin,

from the laboratory of Dr. Arloing, (1) the Influence of Splenectomy upon the Globular Contents of the Blood, upon the Calorimetric Amount of Heat, and upon the Content of Iron in the Dog, and (2) the Influence of Splenectomy upon the Leucocytes in the Blood of the Dog; Dr. Girard, Cystic and Parenchymatous Goitre; Professor Teissier, Nosography of the Pathological Conditions in the Sub-diaphragmatic Portion of the Aorta; Dr. L. F. Blanchard, Mercury in Syphilis; Dr. Bloch, Gynæcological Kinesitherapy, its Therapeutic Value; the Electric Light Bath; Dr. Pattier, Deafness from Diphtheria, its Treatment by Acoustic Exercises by Means of Tuning Forks; the Physiological Re-education of the Ear; Dr. Brumpt and Dr. Wiertz, Result of Researches Undertaken in the Congo District on the Transmission of Sleeping Sickness; Dr. Berillon, the Physiological Treatment of Alcoholics and Habitual Drunkards and the Question of an Anti-Alcoholic Organisation of Paris; Dr. Picot, Medical Geography of the Department of the Isère; Dr. Langlois, on the Extension of the Workmen's Compensation Act of 1889 to Illnesses Contracted in the Course of their Employment. Besides these many other interesting communications were laid before the Congress.

ERRATUM.—In the last paragraph of the letter from our Paris correspondent which appeared on page 739 of our issue of Sept. 3rd the words "60 to 80 ampères" should, of course, read "60 to 80 *milliampères*."

Sept. 5th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Small-pox in Zion.

AN epidemic of small-pox exists at the present time in Zion City, the headquarters of Prophet Dowie. Vaccination is not permitted in Zion, so that the disease is likely to spread among its citizens. The health authorities have isolated the small-pox patients but no medical attendance is permitted by their leader; the sick will, therefore, have to rely solely upon the prophet for the relief of their bodily ills.

Sea-sickness.

Dr. J. Leonard Corning of New York claims to have discovered a trustworthy remedy for sea-sickness. Dr. Corning describes the results of his experiments in this direction in the *New York Medical Journal* of August 13th. He experimented seated in a chair which could be rotated at whatever speed desired and found that at 30 rotations a minute he experienced the sensations of sea-sickness. Dr. Corning then proceeded to dose himself with various drugs. He found that hyoscine hydrobromide considerably reduced without entirely removing the vertigo and lessened, although it did not stop, the nausea. Resorcin acted effectually in dissipating the nausea. The vertigo was finally suppressed by means of opium. The investigator then decided to test the efficacy of these remedies in a more practical way and took passage on a small, old boat, the mode of sailing of which was warranted to try thoroughly the stomach of the landsman. The first storm brought on sea-sickness in aggravated form and he took a dose of the mixture with the result that in ten minutes the nausea had left him and in 20 minutes the vertigo disappeared. The other afflicted passengers were then dosed with the same mixture and with the exception of one hysterical anæmic woman the outcome was similar to that in the case of Dr. Corning.

The New York City Health Board and Mortality among Children.

Commissioner of Health of New York city, Dr. Darlington, has recently been making investigations in the causes of the high rate of mortality of children during the month of July and has embodied his conclusions and some remedies suggested in a circular just issued. The circular is in part as follows: "An investigation of the cause of the illness in infants who died from diarrhœal diseases in the borough of Manhattan during the month of July has shown that the careless and improper method of preparing food, together with the character of the food used, has been in many instances the chief causative factor." Among other suggestions these are made: "Do not give the baby condensed milk. 27 per cent. of the babies who died during July were fed on condensed milk, although only about 7 per cent. of all babies in Manhattan are fed on condensed milk. Never use the loose milk sold in the grocery stores as food for the baby. Never give the baby raw milk in warm weather; milk must always be sterilised and prepared as directed by the Department of Health or by private physician. Use only bottled pure fresh milk, properly prepared and sterilised, and feed the baby at regular intervals—about every two and a half or three hours. In the morning prepare and sterilise enough milk to last the baby until the next morning. Cover each bottle and place on ice after sterilisation." Such circulars as these should be of much use in educating mothers as to the best methods of feeding infants. The Health Board of New York city takes a maternal interest in the physical well-being of the citizens and perhaps this is a reason for the decreased death-rate.

To Investigate the Causes and Prevention of Pneumonia in New York City.

The Board of Estimates of New York, in response to a request made by the Health Commissioner, has appropriated the sum of $10,000 (£2000) to be expended by a commission to investigate the causes and prevention of pneumonia. The commission will consist of the following well-known medical men: Dr. Frank Billings of Chicago, Dr. John H. Musser of Philadelphia, Dr. Theobald Smith of Boston, Dr. William Osler and Dr. William H. Welch of Baltimore, and Dr. Edward G. Janeway, Dr. L. Emmet Holt, and Dr. I. Michael Prudden of New York city. Pneumonia is peculiarly prevalent and fatal in New York. During the past winter the deaths from this disease rose to an unprecedented figure. Of course the intensely cold and long winter was chiefly responsible for the high mortality from pneumonia. Nevertheless, there must be reasons for the preponderance of cases of pneumonia which occur in New York city and it is fitting that a commission should be appointed to investigate the matter.

August 23th.

Obituary.

JOHN RUXTON, M.D. ABERD.

BY the decease of Dr. John Ruxton of Blackpool, who passed away on August 12th at the comparatively early age of 56 years, the profession loses a highly esteemed and popular member. The son of a well-known Scotch medical man who practised for nearly 50 years at Foveran, a rural district in the north of Aberdeenshire, he studied medicine at Aberdeen University where he graduated as M.B. in 1869 and M.D. in 1883. After holding the appointment of house surgeon at the Preston Infirmary he entered the army as assistant surgeon to the 17th Regiment with which he served in India. In 1873 he was promoted to the rank of surgeon-major and served in the Jowaki campaign against the Afridees in 1877, receiving the Indian frontier medal with the Jowaki clasp. On his return to England he was stationed at various places, including Preston Barracks. On retiring from the service he practised for 21 years at Blackpool where he was universally respected by his colleagues and the public. He was consulting surgeon to the Blackpool Infirmary and an honorary medical officer of the Manchester Children's Convalescent Home at St. Anne's-on-the-Sea. Tropical residence and hard work at home began to undermine his health some four years ago and his last illness was of brief duration. His genial and kindly disposition, combined with professional skill of a high order, will cause him to be greatly missed by a large circle of relatives and friends.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Erich Bennecke, extraordinary professor of surgery in Berlin, from septicæmia due to an operation wound, at the age of 39 years. He had published a "Students' Manual of Operative Surgery" and a "Monograph on Gonorrhœal Inflammation."—Dr. Rafael Coën, a Vienna physician, whose specialty was defective speech.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board in the subjects indicated at the quarterly meeting of the examiners:—

Chemistry.—Horace Rhodes Leach Allott, University College, Sheffield; Richard William Annison, Middlesex Hospital; John James Harkness Beckton and Owen Henry Bowen, St. Bartholomew's Hospital; Norman Barnett Benjafield Edinburgh University and St. Bartholomew's Hospital; Vernon Dudley Bramston Bransbury, St. Thomas's Hospital; James Brierley, B.A. Oxon., Oxford University; Cuthbert John Butler, Charing Cross Hospital; Ernest James Chambers, Westminster Hospital; Benjamin Dale, St. George's Hospital; David Davies, London Hospital; George Alexander Dempster, St. Mungo's College Glasgow; Frederic Nicklin Doubleday, Birkbeck Institute; Frederick Dumphy, Westminster Hospital and Technical Institute, Norwich; Walter James Ignatius Dwyer, Pharmaceutical Society; Edwin Charles East, Birmingham University; Bertie Cecil Eskell, Merchant Venturers' Technical College, Bristol; Evan Richard Evans, St. Bartholomew's Hospital; Alexander Kennedy Glen, St. Mary's Hospital; Bernard Grainger Goodwin, Birmingham University; Philip Thomas Harper, St. Thomas's Hospital; Frank Melville Harvey, Stonyhurst College, Staffs.; Leonard Austin Harwood, Birkbeck Institute; MacWilliams Henry, University College, Liverpool; George Holmian, Birmingham University; Victor Patrick Hutchinson, Guy's Hospital; Gwilym James, Cambridge University and London Hospital; Bertram Abbott Keats and Charles Frederick Vivian Kebbell, St. Bartholomew's Hospital; Stuart Hardy Kingston, University College, Bristol; Frederick Martin Lipscomb, Bedford Grammar School; Reginald Arthur Morrell, St. Thomas's Hospital; Samuel Parker Mort, Owens College, Manchester; Satyen Mozumder, St. Bartholomew's Hospital; Jeremiah John O'Mullane, Queen's College, Cork; Archibald Bruce Pettigrew, University College, Sheffield; Clifford Crawshaw Pickles, Yorkshire College, Leeds; Alec Linford Saul, Hartley College, Southampton; Arthur Bodley Scott and Herman Spitz, St. Bartholomew's Hospital; Samuel Shepheard, Stonyhurst College, Staffs; Edmund Ralph Sircom, University College, Bristol; Kenneth Wolferstan, St. Bartholomew's Hospital; Reginald Samuel Sherard Statham and Stanislaus Swonnell Morton Wood, Westminster Hospital; Henry Hercules Skinner Templeton, University College, Bristol; Harold Eustace Wall and Jocelyn Langton Waller, St. Mary's Hospital; Sydney Williams, University College, Cardiff; and Charles Reynolds Woodruff, Birkbeck Institute.

Practical Pharmacy.—Charles Edgar Harvey Adam, St. Bartholomew's Hospital; Charles Henry Fairbank Atkinson, Charing Cross Hospital; John Herbert Bankes, St. George's Hospital; Edgar Cecil Banks, Owens College, Manchester; Ernest Charles Page Barnes, London Hospital; Alexander Baxendale, Owens College, Manchester; Arthur Morris Benett, Guy's Hospital; William Percy Bonner, private study; Francis Brachi, St. George's Hospital; Arthur James Brown, London Hospital; Josiah Browne, King's College Hospital; Robert Greville Buckby, St. Mary's Hospital; Joseph Aloysius Byrne, Owens College, Manchester; Robert Stanley Capon and John Peter Clarke, University College, Liverpool; Alfred Hollier Clough, Guy's Hospital; Reginald Cock, Charing Cross Hospital; Percival Sandys Connellan, University College, Bristol; Henry Cooper, B.A. Camb., Cambridge University and London Hospital; Sydney Coram, St. Bartholomew's and King's College Hospital; Archibald Cordon, Birmingham University; Hugh Pallister Costobadie, Guy's Hospital; Henry Robert Cotton and Richard Molesworth Dennys, St. Bartholomew's Hospital; Walter James Ignatius Dwyer and John Griffith Edwards, private study; Horace Bernard Farrant, Owens College, Manchester; Rupert Farrant, Westminster Hospital; Arthur Edwin Foerster, St. George's Hospital; Edgar Herbert Good, London Hospital; Richard Sydney Graham, St. Mary's Hospital; Gilbert Clement Gray and John Herbert Gurley, St. Bartholomew's Hospital; Claude Percival Rivers Harvey, London Hospital; David Havard, University College, Cardiff; George Atkin Hayman, King's College Hospital; Philip Keith Hill, Yorkshire College, Leeds; Godfrey Martin Huggins, St. Thomas's Hospital; Frederick William Hobbs, Ernest Charles Holtom, and Sydney Francis Huth, St. Mary's Hospital; Harold Mundee Inman, B.A. Oxford, Oxford University and St. Mary's Hospital; Harold Garnett Janilon, University College Hospital; William Griffith Jones, University College, Cardiff, and Owens College, Manchester; Ernest McIntyre, Charing Cross Hospital; Philip Walter Mathew, Middlesex Hospital; Thomas Mackinlay Miller, St. Bartholomew's Hospital; Frank Cyril Morgan and John Frederick Henry Morgan, University College, Bristol; Basil Newman Murphy and Frederick William Murray, University College, Liverpool; Albert Edgar Nicholls, University College, Cardiff; Thomas Francis O'Mahony, London Hospital; Thomas Godfrey Percival, Yorkshire College, Leeds; Edward Prall and Frederick Pridham, St. Thomas's Hospital; Richard Bancroft Nevil Reade, St. Mary's Hospital; Ricardo Adolfo Robinson, University College, Liverpool; Louis Philip Sanders, London Hospital; John Edwin Scales, Guy's Hospital; William Sidney Simpson and Thomas William Ramsden Strode, Charing Cross Hospital; Frank Lewis Smith, St. Thomas's Hospital; Wilfrid Reginald Taylor and Harold Eustace Wall, St. Mary's Hospital; Frederick Thompson, Birmingham University; Carl Rudolph Baltzár von Braun and Leslie Ferguson Kennedy Way, St. Bartholomew's Hospital; Cyril Howard Welch, King's College Hospital; Percy Colthurst West, Cambridge University and St. Thomas's Hospital; Harrie Bruce Wickham, University College, Liverpool; Washington Everitt Wilks, Charing Cross Hospital; Herbert Glynne Williams, University College, Cardiff; William Humphrey Williams, Cambridge University and St. Bartholomew's Hospital; and Wilson Trevor Williamson, St. Bartholomew's Hospital.

Elementary Biology.—Richard Bernard Abraham and Tom Chamney Russell Archer, St. Thomas's Hospital; Harold Wordsworth Leach Allott, University College, Sheffield; Charles William Tresidder Baldwin, Charing-Cross Hospital; Francis Balkwill and Willoughby Edward Pellew Briggs, Owens College, Manchester; Arthur Cecil Barker Biggs, University College Hospital; Clifford Charles Chapman Brace, London Hospital; William Victor Carbett, St. Thomas's Hospital; Ernest Edgar Davies, University College, Bristol; Richard Pittard Davies, University College, Cardiff; George Alexander Dempster, St. Mungo's School, Glasgow; Daniel Cuthbert Druitt, Felsted School; Edwin Charles East and George Holmian, Birmingham University; Francis Hamley Fawkes, St. Mary's Hospital; Charles William Gee, University College, Liverpool; Francis Jervis Gordon, Bertram Abbott Keats, Charles Frederick Vivian Kebbell, and Sussex Charles Langford, St. Bartholomew's Hospital; Kenneth George Haig, St. George's Hospital; Arthur William Havard, University College, Cardiff; Reginald Andrew Hosegood and Samuel Parker Mort, Owens College, Manchester; Geoffrey Leo Lawlor, St. Mary's Hospital; William Stanes Luly, University College, Cardiff; Gordon Kilkpatrick MacLean, St. Bartholomew's Hospital; Percy Edward Hughes Patey, Guy's Hospital; Arthur Thomas Pitts, John St. Andrew Titmas, and Alfred Richardson Wise, Birkbeck Institute; Ernest Alfred Pywell, St. Thomas's Hospital; Ivor Ridge-Jones, St. George's Hospital; George Gordon Rigby, Owen's College, Manchester; Arthur Lawry Robinson, University College Hospital; Neil Frederick Sinclair and John Glegg Watson, London Hospital; George Frederick Turner, St. George's Hospital; Donald Wainwright, Middlesex Hospital; and Percy Arthur With, St. Bartholomew's Hospital.

EXETER WORKHOUSE INFIRMARY.—The Local Government Board has authorised the expenditure of £12,250 for the new infirmary buildings of the Exeter workhouse.

As a result of the recent *fête* organised for the Dawlish (Devon) Cottage Hospital, the sum of £103 has been forwarded to the treasurer of that institution.

HOSPITAL SATURDAY AT PLYMOUTH.—July 16th was observed in Plymouth as Hospital Saturday and the sum of £440 has been already handed to the committee of the South Devon and East Cornwall Hospital.

VACCINATION GRANT.—Dr. James Ratcliff-Gaylard, the public vaccinator of the St. Clement's district of the Truro union, has been awarded the grant for successful vaccination by the Local Government Board.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—The Duchess of Albany has consented to open the new operating theatre at the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, at 3.30 P.M. on Saturday, Oct. 8th, and to attend a harvest festival service in the chapel, at which Bishop Welldon will preach.

DONATIONS AND BEQUESTS.—Sir John Simon has by his will left estate valued at £26,635 8*s.* 8*d.* gross, with net personalty £26,545 15*s.* 4*d.* Subject to annuities and the life interest in the special trust fund of his adopted daughter, he left the ultimate residue of his estate to St. Thomas's Hospital, and should the income of the special trust fund exceed £300 then the surplus is also to be paid to St. Thomas's Hospital.

NEGLECT OF PRECAUTIONS AGAINST SMALL-POX IN RUSSIA.—It is reported from Vilyouisk, Russia, that a hospital, which has been built there after a long agitation is totally useless for want of medical men, and the *Vostotch noe Obosrenie* adds that in consequence of this lack of medical men the people are dying rapidly in the surrounding district from small-pox. The dead are not even buried and so they contribute to the further dissemination of the disease which is also raging in other parts of the country without any medical assistance being provided for the victims.

NATIONAL DAHLIA SOCIETY.—The exhibition of this society took place at the Crystal Palace on Sept. 2nd and 3rd and a fine show of dahlias was made. Although the dahlia was introduced to England about the year 1787 from Mexico it was not until 1804, when it was re-introduced, that the regular cultivation began, so that the dahlias of to-day represent 100 years of cultivation, but, curiously enough, the original pompons are now almost replaced by the increasing favouritism shown for the cactus variety introduced from Japan not 30 years ago. The exhibition showed this triumph of the cactus variety to a marked degree, for comparatively few pompons were in evidence. The entries for competitors were divided into three divisions—viz., one for nurserymen, one for amateurs, and one for open classes. The division

for amateurs had a subdivision for those who had never won a prize from the society. The first and second division were divided into sections for show, fancy, cactus, pompon, and single dahlias, and a section for decoration. Some of the finest dahlias we saw in the show were named "Sirius," "Mrs. H. L. Brousson," "Thomas Parkin," "Mrs. Hobbs," "Rosy Morn," "Effective Vernon," and the new single dahlia "Mikado." In several cases these were shown by more than one exhibitor. On the second day of the show some of the second prizes looked fresher than the first, from which it would seem that the "keeping" qualities of a dahlia when cut should be taken into account.

BOOKS, ETC., RECEIVED.

ARROWSMITH, J. W., Quay-street, Bristol. WHITTAKER AND CO., 2, White Hart-street, Paternoster-square, E.C.

University College, Bristol. Calendar for the Session, 1904-1905. Price 1*s.*

ART AND BOOK COMPANY, Westminster.

Studies Contributed to the "Dublin Review," by the late Dr. J. R. Gasquet. With Introduction by the Right Rev. J. C. Hedley, O.S.B., Bishop of Newport. Edited by Dom. H. N. Birt, O.S.B. Price not stated.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Clinical Diagnostic Bacteriology, including Serum Diagnosis and Cytodiagnosis. By Alfred C. Coles, M.D., D.Sc., F.R.S. Edin. Price 8*s.* net.

GOVERNMENT PRINTING OFFICE, Washington.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol., IX. L-Lyurl. 1904.

HIRSCHFELD BROTHERS, LIMITED, 13, Furnival-street, E.C.

Hossfeld's Japanese Grammar. Comprising a Manual of the Spoken Language in the Roman Character, together with Dialogues on Several Subjects and Two Vocabularies of Useful Words. By H. J. Weintz, author of "The Spanish Principia," &c. Price 10*s.* 6*d.* net cash.

McDOUGALL'S EDUCATIONAL COMPANY, LIMITED, 24, Warwick-lane, E.C.

Laws of Health. Price 6*d.* net.

MACMILLAN AND CO., LIMITED, London.

Tables for Qualitative Chemical Analysis. Arranged for the Use of Students. By A. Liversidge, M.A., LL.D., F.R.S., Hon. F.R.S.E., Associate of the Royal School of Mines, London, Professor of Chemistry in the University of Sydney. Second edition. Price 4*s.* 6*d.* net.

ORIENT PRESS, 26, Paternoster-square, E.C.

The Wisdom of the East Series. Edited by L. Cranmer-Byng and S. A. Kapadia. The Sayings of Lao Tzŭ. Translated from the Chinese, with an Introduction, by Lionel Giles, M.A. Oxon., Assistant at the British Museum. Price 1*s.* net.

REBMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.

Health and Disease in Relation to Marriage and the Married State. A Manual contributed to by Privatdozent Dr. med. G. Abeloff, Privatdozent Dr. med. L. Blumreich, Privatdozent Dr. phil. R. Eberstadt, Geh. Med.-Rat Prof. Dr. A. Eulenburg, Geh. Med.-Rat Prof. Dr. C. A. Ewald, Geh. Med.-Rat Prof. Dr. P. Fürbringer, Hofrat Prof. Dr. med. M. Gruber, Dr med. W. Havelburg, Geh. Med.-Rat Prof. Dr. A. Hoffa, Prof. Dr. med. et phil. R. Kossmann, Geh. Med.-Rat Prof. Dr. F. Kraus, Dr. med. R. Ledermann, Med.-Rat Dr. A. Leppmann, Geh. Med.-Rat Prof. Dr. E. v. Leyden, Prof. Dr. med. E. Mendel, Dr. med. A. Moll, Geh. Med.-Rat Prof. Dr. A. Neisser, Geh. Med.-Rat Prof. Dr. J. Orth, Dr. med. S. Placzek, Prof. Dr. med. et phil. C. Posner, Privatdozent Dr. med. P. F. Richter, Prof. Dr. med. H. Rosin, and Dr. med. W. Wolff. Edited by Geh. Medizinalrat Prof. Dr. H. Senator and Dr. med. S. Kaminer. The only authorised translation from the German into the English Language by J. Dulberg, M.D., of Manchester, England. Vol. I. (Complete in two volumes. Vol. II. will be ready shortly.) Price for the complete work, 30*s.* net (cloth) or 35*s.* net (half leather) payable in advance.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BELL, EDWARD S., M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Superintendent of St. Olave's Union Infirmary, Rotherhithe, S.E.

BENNETT, H. S., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident House Surgeon to St. Thomas's Hospital.

BIRKS, G. T., M.B., B.C. Cantab., has been appointed Resident House Surgeon to St. Thomas's Hospital.

BIRT, A. C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident House Surgeon to St. Thomas's Hospital.

BULLEY, F. M., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Assistant in the Skin Department at St. Thomas's Hospital.

BULLEID, ARTHUR, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Hearts of Oak Friendly Society at Midsomer Norton (Somerset).

CARVER, N. C., B.A., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident House Surgeon to St. Thomas's Hospital.

FOOTNER, G. R., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

GIBSON, A. G., B.A., M.B., B.Ch. Oxon., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

GRAHAM, JOHN, B.Sc., M.B., Ch.B. Glasg., has been appointed a Resident Assistant in the Victoria Infirmary, Glasgow.

GRAY, R. E. G., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

GUTHRIE, T., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Assistant in the Ear Department at St. Thomas's Hospital.

HARNETT, W. L., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Assistant in the Skin Department at St. Thomas's Hospital.

HAWARD, W., M.B., B.S. Durh., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident House Physician to St. Thomas's Hospital.

HEDLEY, J. P., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

HENDERSON, T. B., M.B., B.Ch. Oxon., has been appointed Resident Assistant in the Throat Department at St. Thomas's Hospital.

HIGHAM, B., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident House Physician to St. Thomas's Hospital.

HOOLE, JOHN, M.R.C.S. Eng., L.S.A., has been appointed Medical Officer of Health to the Ashbourne Rural District.

KISCH, H. A., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

LATHAM, C. H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident House Physician to St. Thomas's Hospital.

LECKY, H. C., M.B., B.Ch. Oxon., has been appointed Resident House Physician to St. Thomas's Hospital.

LEWIS, H. WOLSELEY, M.D., F.R.C.S., has been appointed Medical Superintendent of the Kent County Lunatic Asylum, Barming Heath, near Maidstone.

MCLAREN, GEORGE H., M.R.C.S. Eng., has been appointed House Surgeon to the Birmingham and Midland Eye Hospital.

NAPIER, A. HARPER, M.B., Ch.B. Glasg., has been appointed a Resident Assistant in the Victoria Infirmary, Glasgow.

PINCHES, H. I., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

POLLOCK, ANDREW M., M.B., Ch.B. Glasg., has been appointed a Resident Assistant in the Victoria Infirmary, Glasgow.

RABY, LEONARD, M.D. Durh., M.R.C.S. Eng., L.S.A., has been re-appointed medical officer for the Second District of the Devizes Union.

SHARPE, EDWARD S., M.B., Ch.B. Edin., has been appointed Junior Assistant House Surgeon to the Stockport Infirmary.

STANNUS, H. S., M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

TAKAKI, K., M.R.C.S., L.R.C.P., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

THOMSON, J. WHITE, M.B., Ch.B. Glasg., has been appointed a Resident Assistant in the Victoria Infirmary, Glasgow.

VAUGHAN, J. C. F. D., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

WHITTING, R. E., B.C. Cantab., has been appointed Resident Assistant in the Throat Department at St. Thomas's Hospital.

WYNN, WILLIAM H., M.D., B.Sc. Lond., M.Sc., M.B., B.Ch. Birm., has been appointed Casualty Assistant Physician to the General Hospital, Birmingham.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BATH, ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BERKSHIRE COUNTY COUNCIL.—Medical Officer of Health. Retaining fee of 50 guineas a year and additional fees.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £170 per annum, with rooms, fire, lights, and attendance.

BOURNEMOUTH, NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary £10 per month, with board, residence, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

EBBW VALE WORKMEN'S MEDICAL FUND COMMITTEE.—Two Assistant Medical Officers. Salary £200 per annum, with fees.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, unmarried. Salary £80, with board.

GORDON HOSPITAL FOR FISTULA, &c., Vauxhall Bridge-road, S.W.—House Surgeon. Honorarium £15 15*s.* for six months, or £40 for twelve months, with board and residence.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Pathologist. Salary 50 guineas per annum.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, and laundry.

LEICESTER INFIRMARY.—Clinical Clerk for six months. Honorarium of £10 10s., with board, apartments, and washing.

LIVERPOOL, CITY OF, INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LONDON HOSPITAL.—Assistant Physician.

MANCHESTER, CRUMPSALL WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, each for six months. Salary of the two former at the rate of £40 a year, of the two latter at the rate of £20 a year. Also Casualty Officer. Salary at rate of £150 per annum.

PINEWOOD, NEAR WOKINGHAM, BERKS, LONDON OPEN-AIR SANATORIUM.—Resident Assistant Medical Officer. Salary £100 a year, with board.

QUEEN'S JUBILEE HOSPITAL, Earl's Court, S.W.—House Surgeon for six months, renewable. Salary at rate of £52 per annum, with board, residence, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, lodging, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing.

ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, Devonport.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

ROYAL DENTAL HOSPITAL, Leicester-square, W.C.—Anæsthetist. Honorarium £50 per annum.

ST. MARY'S HOSPITAL, Paddington, W.—Medical Officer in charge of X-ray Department, for six months. Salary £150 per annum.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Physics.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and washing.

TOTTENHAM HOSPITAL.—House Physician for six months. Salary £60 per annum, with board, residence, and laundry.

WINCHESTER, ROYAL HANTS COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with rooms, attendance, coal, gas, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTH.

MURRAY.—On August 31st, at Manchester-square, W., the wife of H. Montague Murray, M.D., of a daughter.

MARRIAGES.

EDGE—FFISKE.—On Sept. 1st, at St. Laurence Church, Brundall, Norfolk, by the Rev. Canon Garrick, Samuel George Edge, M.D., B.Ch., to Amy, daughter of Mr. Henry ffiske.

LEANING—RICHARDS.—On August 24th, at St. Michael and All Angels, Chiswick, Robert Craske Leaning, M.B., B.S., to Mary Gladys, daughter of Mr. William Richards.

MARSHALL-FICKLING—NEWSON.—On August 31st, at Holy Trinity Church, Barnes, by the Rev. Herbert Sheppard, Robert Marshall-Fickling, L.D.S. Eng., to Florence Ida, daughter of Mr. W. H. Newson.

MURRAY—SEETON.—On August 31st, at Fort Massey Church, Halifax, Nova Scotia, by the Rev. James Falconer, Leonard Milton Murray, M.D., to Ella Winifred, daughter of Mr. Seeton.

PARTRIDGE—JACKSON.—On Sept. 1st, at St. Peter's, Preston, Sussex, by the Rev. Edward Riley, Aubrey H. Partridge, M.D., to Elinor May, daughter of Mr. Arthur Jackson.

WALKER—MUIR.—On Sept. 3rd, at St. Saviour's, Pimlico, Ernest A. Walker, M.D., to Lilian, daughter of Mr. Joseph Allison Muir.

WILSON—GRATTAN.—On Sept. 1st, at the parish church, Chipping Ongar, Essex, by the Rev. J. Tanner, Geoffrey Remington Wilson, M.B., to Eileen Margaret Georgina Grattan, daughter of Dr. M. H. Grattan.

DEATHS.

CARVER.—On Wednesday, Sept. 7th, at Torquay, Edmund Carver, M.D., late of Cambridge, aged 80. Friends please accept this intimation. No flowers, by request.

COCK.—On August 30th, at Queen's-road, S.E., Herbert Edgecombe Cock, M.R.C.S., L.R.C.P., aged 32.

CROSSMAN.—On Sept. 1st, at White's-hill, Hambrook, Bristol, Edward Crossman, M.D., in his 72nd year.

HUME.—On Sept. 2nd, at Devonshire-street, Islington, Frederick Henry Hume, M.D., M.R.C.S., aged 61.

LANPHIER.—On Sept. 2nd, at Hotham House, Harrogate, Richard Lanphier, M.B., aged 79.

NAUGHTIN.—On the 6th inst., at 104, Gloucester-place, Portman-square, W., William Naughtin, M.R.C.S., the beloved husband of Gertrude Naughtin, deeply mourned by his sorrowing wife and children, aged 76. R.I.P.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DOWIE HIMSELF AGAIN.

DOWIE'S survival of the magnificent snubbing received by him in London should interest the student of mania and the historian concerned with Anglo-Saxon decivilisation. The Arch-quack is either very pachydermatous or wholly plucky—perhaps both. He is back in Zion and has published a huge portrait of himself as "Elijah the Restorer" as well as a vile "cartoon" entitled "Love, the First Fruit of the Spirit," and a vast illustration representing Zion's "Fourth Feast of Tabernacles" on July 14th. Our facts are derived from "Leaves of Healing," which we find in a Kentish hotel said by the current copy of "A.B.C." to be the peculiar haunt of "literary men and medical men." On the fourth day of the Feast of Tabernacles Dowie preached on the "Around-the-World Visitation made 'for Zion's Sake.'" Of course he said very little about England, but that little contained the most serious charges. Here are a few characteristic excerpts.

> "It was 'for Zion's Sake,' primarily, that I made the Visitation which has just closed; a Visitation which seems to have caused a great deal of commotion."
>
> "I must confess that there was one out of the eight [visitors] who made more noise than all the rest."
>
> "We had gone out only upon a little reconnaissance, a little observation tour."
>
> "I was warned, for instance, not to set my foot in Great Britain. I was told that there was a plot to take my life, and there is no doubt whatever that such a plot existed, for some of the London papers themselves said that if I had gone to Euston-road Tabernacle on Monday I might never have left that place alive."

On the subject of his pretensions as a Healer Dowie seems now to be rather silent, but he speaks unctuously of the future of his city and of "what Zion land was worth to the Chicago and Milwaukee Electric Railroad." The Quack is perhaps about to disappear in the vulgar religionist of business, a type that has flourished in the States since the days of the egregious Harris.

FEES FOR MEDICAL EVIDENCE.

To the Editors of THE LANCET.

SIRS,—I was called to give evidence at the police court in a case of assault some three months ago and the defendant being committed for trial at the quarter sessions I was bound over in £25 to give evidence there, which I did in due course. I have been sent a fee of £1 1*s.* inclusive for my attendance at both courts. I have refused to accept it and am told that I am only entitled to a half fee of 10*s.* 6*d.* at each court as I was not detained for more than four hours from my professional work. I was also informed at the same time that the fee for a medical witness at all the criminal courts was the same—namely, £1 1*s.* per day or 10*s.* 6*d.* for any time not exceeding four hours. I should be much obliged to you if you or any of your readers will tell me what fee I am entitled to claim, as I have always been under the impression that it was 10*s.* 6*d.* at the police court and £1 1*s.* at the sessions. In conclusion, I might add that within the last six months a fee of £1 11*s.* 6*d.* was given by the same courts in the same place for similar attendances as my own and it seems extraordinary that the same fee is not paid to me now.—I am, Sirs, yours faithfully,

August 30th, 1904. J. W. C.

*** Our correspondent has been correctly informed as to the fees now payable in all criminal courts to medical witnesses. The fees named, however, are not what must be paid but are the maximum sums allowable. The power to give less is, naturally and rightly, not often exercised.—ED. L.

JUDGES AND CORPORAL PUNISHMENT.

THE *Law Journal* of Sept. 3rd says under the above heading: "Corporal punishment would appear to be growing out of favour. A return has just been issued which shows that this form of punishment was ordered only in 16 cases in 1903. Seven of these sentences were passed at the Central Criminal Court, five by Judge Rentoul and two by the Common Serjeant. It is interesting to notice that Mr. Justice Wills, Mr. Justice Lawrance, and Mr. Justice Darling are the only three High Court judges who ordered the use of the 'cat.' Mr. Justice Lawrance ordered it in four cases, Mr. Justice Wills in three, and Mr. Justice Darling in two."

SILK SHEETS.

WE have received from Mr. J. H. Dixon of Bradford, Yorkshire, a sample of a silk sheet. The warp is made from good China silk and the weft from noil silk which is made from waste cocoons, and the little broken pieces of the cocoons are left in the yarn. Silk night-gear has, of course, been known for a long time but silk sheets have hitherto been the luxury of the very rich; these sheets, however, are of quite a reasonable price. The maker's idea is that they would

be found valuable in cases of rheumatism but as to this we have doubts. He says in his accompanying letter that the slightly rough effect of the "shivs" left in gives a pleasant glow, possibly helping the general circulation. We do not quite see how this could affect the body unless the user of the sheets is supposed to sleep in them naked, but whether they would have any remedial effect or not the fabric would appear to form a very pleasant sheeting that is well woven, and the silk is of natural colour and, according to the manufacturer, has not been stoved or dyed. The sheets can be supplied through any first-class shop by stating the name of the maker.

THE PASSAGE OF FOREIGN BODIES THROUGH THE INTESTINES.

To the Editors of THE LANCET.

SIRS,—The following facts may be interesting as showing how in some fortunate cases foreign bodies may pass through the intestinal canal without giving rise to any disturbance. On Friday, August 26th, at 6 P.M. my youngest boy, aged one year and seven months, got hold of a card of linen buttons. There had been a dozen on and none had been taken off it. Judge, then, our horror on finding four missing. As we could not find the four we concluded they had been swallowed. The next day, Saturday, at 1 P.M., all four buttons were passed per rectum without any extra effort or without causing any uneasiness. It will be seen that the buttons took exactly 19 hours to pass.

I am, Sirs, yours faithfully,
A. CHAWNER, L.R.C.P. Lond., M.R.C.S. Eng.

Seaforth, August 30th, 1904.

AN APPEAL ON BEHALF OF MISS E. B. PELLATT, L.S.A.

THE treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram-road, Lee, S.E., acknowledges the receipt the following sums additional to those already reported:—

	£	s.	d.
E. M. G.	0	5	0
Anon.	0	3	0
Dr. May Thorne	5	0	0
Dr. Helen M. Gordon	0	10	6
Dr. Lilian M. Blake ...	0	10	6
Dr. J. H. Galton ...	1	1	0
Dr. E. Malins	2	2	0
Dr. E. Clapton	1	1	0
Dr. P. Fraser	0	10	6
Anon.	1	6	0
C. E. C.	1	1	0
Mr. J. Taylor	0	10	6
Mr. G. Pernet	0	10	6
Mrs. Vaughan	5	0	0
Miss L. Leslie	1	1	0
Miss E. N. Dalton	0	5	0
St. Matthew's Club, Liverpool	0	3	9
Rev. J. A. Thomas ...	2	2	0
Dr. J. Brown	0	10	6
Dr. A. Turnbull, R.N.	0	12	7
Ajax	1	1	0
Dr. E. Grace Adams ...	0	10	6
Mrs. M. Gordon	1	1	0
Mr. F. A. Humphrey	1	1	0
Dr. Charles Steele ...	2	2	0
Mr. C. North	0	10	6
Mr. C. T. Standring ...	0	10	0
Mr. E. Chapman, M.P.	1	0	0
Rev. C. E. McCreery ...	0	2	6
Mr. J. Brindley James	1	1	0
Mrs. Bull	5	0	0
Mrs. E. J. Wigan	5	0	0
Mrs. J. M. Turner	2	2	0
Dr. Elizabeth Wilks ...	5	0	0
Mrs. C. A. Willan	5	0	0
Anon.	0	5	0
Anon.	1	1	0
Anon.	0	10	6
Dr. P. Ashworth	0	10	6
Miss Mackinlay	1	1	0
Dr. F. O. C. S. McDade	0	15	0
Mrs. Raven Hollings ...	20	0	0
Dr. Flora Murray	1	1	0
Mrs. Lowe, M.B.	5	0	0
A Poor Man's Meeting, Seaton	2	0	0
Dr. Frances E. Turle Evans	1	1	0
Dr. Jessie D. G. Evans ...	1	1	0
Rev. W. Francis	10	0	0
Miss C. Francis	1	0	0
Dr. W. Domett Stone ...	1	1	0

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

To the Editors of THE LANCET.

SIRS,—May we venture to ask you to insert another appeal for the Factory Girls' Country Holiday Fund. 3700 girls and women have already been away this year for one, two, and three weeks' change and rest. This is the largest number we have ever been able to send; but we have come to the end of our resources and there are a great number still hoping to go, fresh applications coming in daily. All payments have to be made weekly and if there is not enough money in hand when the girls can obtain a holiday they cannot be sent. Unless, therefore, there is a very generous response to this appeal many will have to go without their holiday this year. The fund renders aid to poor factory workers of the whole of London, many of whom need above all things fresh air and rest. All contribute as far as they are able to the cost of their holiday. Subscriptions and donations will be thankfully received and acknowledged by—

Your obedient servants,
EDWARD CANNEY, Chairman.
MARY M. PAGET, Honorary Secretary.
MARGARET A. BUDFORD, Honorary Treasurer.

St. Peter's Rectory, Saffron-hill, London, E.C., Sept. 1st, 1904.

MOTOR CAR DUST.

W. B. T., writing in reference to the increase of street dust in various towns due to the action of the new cars and motors on the roads, points out that our roads were not originally constructed for mechanical vehicles, but only for horse-drawn carriages. "The wheels of cars and motors," he says, "fulfil a double and different function to those of a cart or carriage as they have to bite the road hard or to dig into it for a *point d'appui*, as well as to support the machine. In the horse cart or horse carriage the grip of the road is done by the four feet of the animal and the wheels are left free to support the machine only and so have to roll smoothly over and do not grip the road as the motor. All four wheels of a motor are doing their weightiest to grip the road all round their tyres, but the horse only grips it by two feet at a time and this surface of contact is of only a small extent and widely separate as the step. The motor wheel acts, therefore, as a grindstone or marble cutter and is driven like it by power machinery against the road, which it must eventually consume away and disperse in gravel and dust. The wheels of a horse carriage, on the contrary, act as conservative agents on roads, on the principle of the roller." Our correspondent is surely in error as to the gripping action of all four wheels, for the two first steering wheels are merely supports. The driving wheels, however, do act as he says, and their destructive effect is such that the only remedy would appear to be the remodelling of certain sorts of highway, making them of asphalte or concrete, so as to be impenetrable or unimpressionable to the scraping action of the tyres of the wheels.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—In reply to an inquiry as to a home for a Roman Catholic feeble-minded boy (in THE LANCET of August 27th) may I call attention to St. Elisabeth's School for Defective Children, Much Hadham, Herts, which would be suitable for the case mentioned? Apply to the sister superior.

I am, Sirs, yours faithfully,
Richmond-hill, Sept. 5th, 1904. G. E. SHUTTLEWORTH.

THE TREATMENT OF METATARSALGIA.

To the Editors of THE LANCET.

SIRS,—Having been a sufferer from Morton's disease (metatarsalgia) for the past three years I can give your correspondent "F.R.C.S.E." (THE LANCET, August 13th, p. 506) the benefit of my experience. I find the pain most liable to come on when wearing a loose easy boot and least troublesome when wearing a tight one. I find that supporting the transverse arch of the foot by applying a "crêpe-velpeau" bandage enables me to play tennis and to walk about with only occasional attacks of pain. I apply the bandage figure-of-8 round the ankle and metatarso-phalangeal joints, firmly but not too tightly, and the looser the boot the more turns I make round the foot. The late Mr. W. J. Walsham told me he had cured two or three cases by excision of the head of the fourth metatarsal bone and I am contemplating undergoing this operation myself. Opinions differ as to the etiology and pathology of metatarsalgia. In my own case it was brought on by jumping with my little boy on my shoulders at a time when I was much run down and my tissues were "out of tone." A few years ago I won the long jump at the U.H.A.C. meeting and used to "take off" from the affected foot.

I am, Sirs, yours faithfully,
Sept. 3rd, 1904. M.R.C.S., L.R.C.P.

W. J. G.—Our correspondent might refer to "Modern Cremation," by Sir Henry Thompson. The respective advantages of cremation and interment were discussed at much length in THE LANCET in 1896, 1897, and 1898. Letters by Sir F. Seymour Haden, the advocate of earth-to-earth burial and strenuous opponent of cremation, were published in our columns on Feb. 19th (p. 537) and May 28th (p. 1494), 1898, as well as in the *Times* of April 11th in the same year. Further information might be obtained from the publications of the Cremation Society of England, the offices of which are at 324, Regent-street, London, W.

Uninitiated.—As A and B are both apparently agreed upon the desirability of respectively selling and buying the practice their best course is to appoint a valuer jointly. We cannot recommend any individual valuer but if A and B will study our advertisement columns they will find the names of various competent men, from among whom they can make a selection. Each party should pay half of the valuer's fee.

Hibernia.—Our correspondent will find a list of suitable books on pp. 655 and 656, especially the latter, of THE LANCET of Sept. 3rd (Students' Number).

D. J. T.—"Modern School Buildings" (Felix Clay. London: B. T. Batsford), reviewed in THE LANCET of May 2nd, 1903, p. 1242.

E. H. P. S.—We should say one guinea for the two documents and 3*s.* 6*d.* for the attendance at the surgery.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 8th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 2	30·06	W.	0·15	91	67	55	55	58	Overcast
,, 3	29·92	SSW	0·06	90	66	57	58	59	Raining
,, 4	30·11	S.W.	...	108	68	49	49	52	Fine
,, 5	30·00	S.	0·04	120	74	58	59	64	Fine
,, 6	29·89	S.W.	...	75	66	63	60	65	Overcast
,, 7	29·97	S.W.	0·12	106	67	53	55	56	Fine
,, 8	30·13	W.	0·08	69	58	53	53	55	Raining

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. E. Dore: Clinique. (Skin.)

TUESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Clinique. (Medical.)

WEDNESDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. L. Barnard: Clinique. (Surgical.)

THURSDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

FRIDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. L. Paton: Clinique. (Eye.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Six Months	0 16 3	Six Months	0 17 4
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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

During the week marked copies of the following newspapers have been received:—*Child's Guardian, Plumber and Decorator, Liverpool Journal of Commerce, Lichfield Mercury, Hertfordshire Mercury, South Bucks Standard, Surrey Advertiser, Tamworth Herald, Blackpool Times, Temperance Chronicle, Freeman's Exmouth Journal, Grantham Journal, Reading Mercury, &c.*

Communications, Letters, &c., have been received from—

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N.—National Sanatorium for Consumption, Bournemouth, Secretary of; Mr. H. Neeles, Lond.; Mr. J. C. Neeles, Lond.

O.—Messrs. Orell, Füssli, and Co., Basel; Mr. C. T. J. O'Rorke, Crosskeiel.

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Q.—Queen Charlotte's Lying-in Hospital, Matron of.

R.—Royal Hants County Hospital, Winchester, Secretary of; Royal Society of London, Secretary of; Dr. L. Roberts, Pontypridd; Dr. R. R. Rentoul, Liverpool; Reuter's Telegram Co., Lond.; Mr. W. S. Robinson, Willaston; Registered Nurses' Society, Lond.; Rusticus; Rhondda Urban District, Medical Officer of Health of; Messrs. Reynolds and Branson, Leeds.

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